ORDER NO. MTC9908031C1
B2

Service Manual

Color Video Projection System

Main Manual
(P4D)

Panasonic

Model	Chassis
PT-51DX80A	**AP817**
PT-51DX80CA	**AP817**
PT-61DX80A	**BP817**
PT-61DX80CA	**BP817**

Note: Refer to Technical Guide (P4D) for functional descriptions and Block Diagrams**.**

This Service manual is issued as a service guide for the models of the **P4D** family listed above. Included in this manual are a set of schematic, alignment procedures, disassembly procedures, and a complete parts list.

"**WARNING!** This Service Manual is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. **Products powered by electricity should be serviced or repaired only by experienced professional technicians.** Any attempt to service or repair the product or products dealt with in this Service Manual by anyone else could result in serious injury or de ath."

The service technician is required to read and follow the "**Safety Precautions**" and "**Important Safety Notice**" in this Main Manual.

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Important Safety Notice

Special components are used in this projection television which are important for safety. These components are identified on the schematic diagram by the symbol ⚠ and printed in **BOLD TYPE** on the replacement part list. It is essential that these critical parts are replaced with the manufacturer's specified replacement part to prevent x-ray radiation, shock, fire or other hazards. Do not modify the original design without the manufacturer's permission.

Safety Precautions

General Guidelines

An ***isolation transformer*** should always be used during the servicing of a PTV whose chassis is not isolated from AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks. It will also protect the PTV from being damaged by accidental shorting that may occur during servicing.

When servicing, observe the original lead dress, especially in the high voltage circuit. Replace all damaged parts (also parts that show signs of overheating.)

Always replace protective devices, such as fishpaper, isolation resistors and capacitors, and shields after servicing the PTV. Use only manufacturer's recommended rating for fuses, circuits breakers, etc.

High potentials, as high as 32kV, are present when this PTV is operating. Operation of the PTV without the rear cover introduces danger for electrical shock. Servicing should not be performed by anyone who is not thoroughly familiar with the necessary precautions when servicing high-voltage equipment.

Extreme care should be practiced when **handling the *picture tube***. Rough handling may cause it to implode due to atmospheric pressure (14.7 lbs. per sq. in.). Do not nick or scratch the glass or subject it to any undue pressure. When handling, use safety goggles and heavy gloves for protection. **Discharge the picture tube** by shorting the anode to chassis ground (not to the cabinet or to other mounting hardware). When discharging connect cold ground (i.e. DAG ground lead) to the anode with a well insulated wire or use a grounding probe.

X-ray Precautions

The front area (between the projection tube and the lens) is enclosed by a metal box to ensure positive safety during normal and abnormal conditions when checking and repairing. To fully ensure safety, the following precautions must be observed.

1. Do not remove the lens or metal box.
2. Make sure to turn the power OFF when the lens is removed or when checking the cleanliness of the lens.
3. Do not remove the lens or metal box to check the projection tube for operation by watching it directly. Use a mirror or paper to view the image.

Before returning a serviced PTV to the owner, the service technician must thoroughly test the unit to ensure that is completely safe to operate. **Do not use a line isolation transformer when testing.**

Leakage Current Cold Check

Unplug the AC cord and connect a jumper between the two plug prongs. Press the POWER switch ON.

Measure the resistance between the jumpered AC plug and expose metallic parts such as screw heads, antenna terminals, control shafts, etc. If the exposed metallic part has a return path to the chassis, the reading should be between 240kΩ and 5.2MΩ. If the exposed metallic part does not have a return path to the chassis, the reading should be infinite.

Leakage Current Hot Check (See Figure 1)

Plug the AC cord directly into the AC outlet. Do not use an isolation transformer during the check.

Connect a 1.5kΩ 10 watt resistor in parallel with a 0.15μF capacitor between and exposed metallic part and ground. Use earth ground, for example a water pipe.

Using a DVM with a 1000 ohms/volt sensitivity or higher, measure the AC potential across the resistor.

Repeat the procedure and measure the voltage present with all other expose metallic parts.

Verify any potential does not exceed 0.75 volt RMS. A leakage current tester (such a Simpson Model 229, Sencore Model PR57 or equivalent) may be used in the above procedure, in which case any current measure must not exceed 1/2 milliamp. If any measurement is out of the specified limits, there is a possibility of a shock hazard and the PTV must be repaired and rechecked before it is returned to the customer.

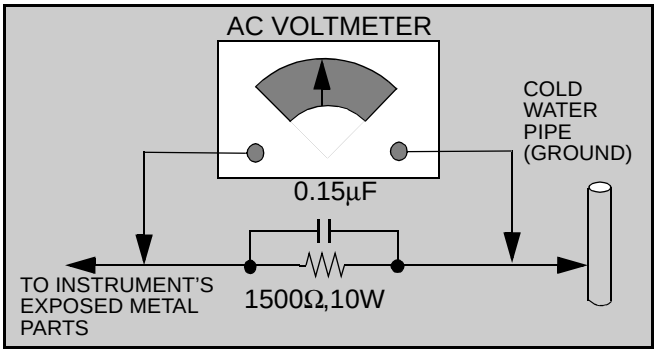


Figure 1. Hot Check Circuit

Insulation Test

Connect an insulation tester between an exposed metallic part and AC line.

Apply 1080VAC/60Hz for 1 second. Confirm that the current measurement is 0.5mA ~ 2.0mA. Repeat test with other metallic exposed parts.

X-ray Radiation ⚠

WARNING: The potential source of X-ray radiation in the PTV is in the high voltage section and the picture tube.

Note: *It is important to use an accurate, calibrated high voltage meter.*

Set **brightness, picture, sharpness** and **color** controls to Minimum.

Measure the High Voltage. The high should be **31.5kV ± 1.0kV**. If the upper limit is out of tolerance, immediate service and correction is required to insure safe operation and to prevent the possibility of premature component failure.

Important Safety Tests

Measuring H.V. ⚠

The anode caps are cemented to the CRTs. To gain access for high voltage measurement, remove the red CRT's anode lead from the flyback transformer (FBT) distributor. Grasp the anode lead protective cap at its bottom and squeeze it against the locking cap body inside. Rotate 1/4 turn counter clockwise and pull the anode lead sleeve out of the FBT distributor. Connect a high voltage lead (+) from your H.V. meter to the FBT distributor, and the common (-) to cold ground (⏚) (See Figure 2).

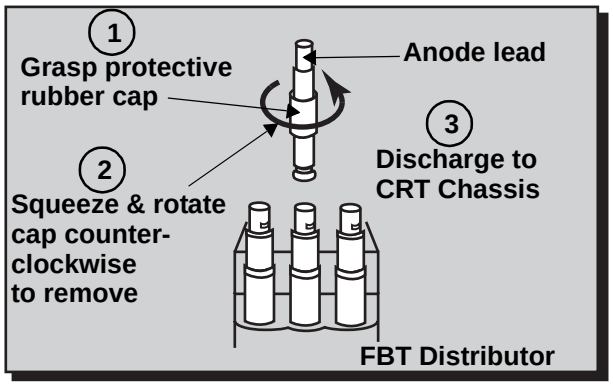


Figure 2. Removal of FBT leads

Note: *Reinsert the anode lead into the FBT distributor until it is tightly and fully seated. Turn the locking cap clockwise to lock in place.*

(EHT) Protector Operation Check

With the cabinet back removed, apply a nominal 120V AC to the PTV.

Over Voltage Test

Preparation:

1. Turn PTV "OFF"
2. Connect an NTSC signal generator to the antenna terminal.
3. Connect DVM (+) TPD4 and (-) TPD5 on D-Board. (See Figure 3)

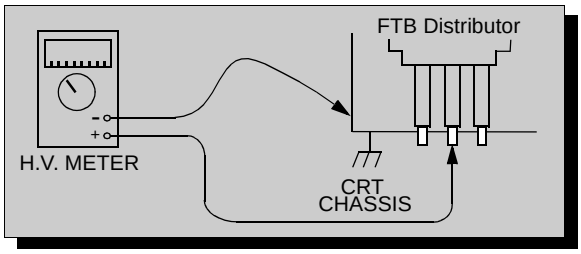


Figure 3. Measuring H.V.

4. Connect a H.V. meter (static type, class 0.1) with high voltage leads to high voltage distributor on FBT. (See Figure 4)

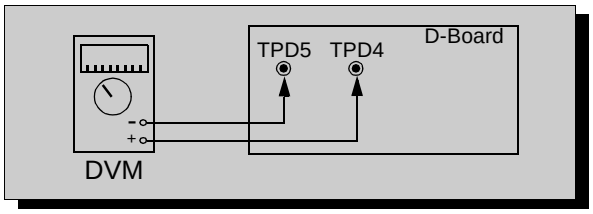


Figure 4. DVM connected to D-Board.

5. Connect the 8 ~ 15 V DC variable power supply to (+) TP10 and (-) TPGND1, on B-Board.

Procedures:

1. Apply a monoscope pattern.
2. Adjust the Picture or Brightness controls so that the DVM reads 16.5 volts ± 0.5 volts.
3. Increase the variable power supply until set turns off. The set should turn off at 16.5 volts ± 0.5 volts (DVM) and high voltage less than 35.5kV.
4. If the DVM reading is other than 16.5 volt (± 0.5 volts), repeat steps 2 and 3.
5. Turn off the variable supply and confirm that the set will turn on with the Remote Control.

CRT Protect Circuit

This circuit blanks the CRT in the event that there is a loss of vertical sweep. The circuit is not adjustable; however the circuit should be checked each time service is performed.

To check circuit:

1. Turn the PTV On and select an active channel.
2. Adjust Brightness and Picture controls for a visible picture.
3. On A-Board **momentarily** connect a short-jumper from TP095 to GND. The CRT should blank and set turns off. If this does not occur, repair must be performed before returning PTV to customer.
4. Remove short-jumper.
5. Confirm that the TV turns on.

Table of Contents

FOLDOUTS

Schematics, Voltages & Waveforms

Layouts

Service Notes

Note: *These components are affixed with glue. Be careful not to break or damage any foil under the component or at the pins of the ICs when removing. Usually applying heat to the component for a short time while twisting with tweezers will break the component loose.*

Leadless Chip Component (surface mount)

Chip components must be replaced with identical chips due to critical foil track spacing. There are no holes in the board to mount standard transistors or diodes. Some chip capacitor or resistor board solder pads may have holes through the board, however the hole diameter limits standard resistor replacement to 1/8 watt. Standard capacitor may also be limited for the same reason. It is recommended that identical components be used.

Chip resistor have a three digit numerical resistance code - 1st and 2nd significant digits and a multiplier. Example: 162 = 1600 or 1.6kΩ resistor, 0 = 0Ω (jumper).

Chip capacitors generally do not have the value indicated on the capacitor. The color on the component indicates the general range of the capacitance.

Chip transistors are identified by a two letter code. The first letter indicated the type and the second letter, the grade of transistor.

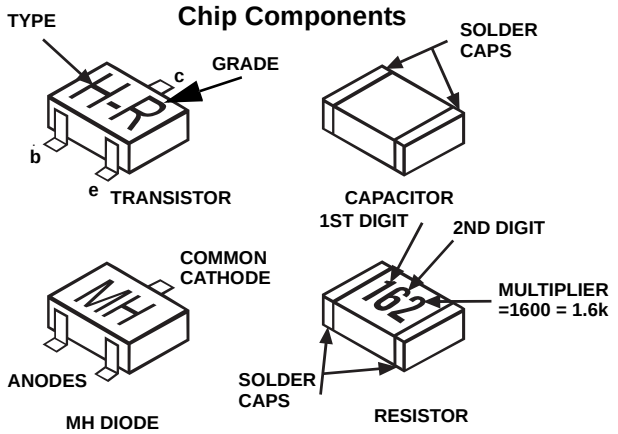
Chip diodes have a two letter identification code as per the code chart and are a dual diode pack with either common anode or common cathode. Check the parts list for correct diode number.

Component Removal

1. Use solder wick to remove solder from component end caps or terminal.
2. Without pulling up, carefully twist the component with tweezers to break the adhesive.
3. Do not reuse removed leadless or chip components since they are subject to stress fracture during removal.

Chip Component Installation

1. Put a small amount of solder on the board soldering pads.
2. Hold the chip component against the soldering pads with tweezers or with a miniature alligator clip and apply heat to the pad area with a 30 watts iron until solder flows. Do not apply heat for more than 3 seconds.

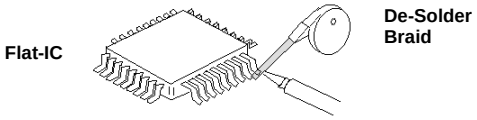


How to Replace Flat-IC

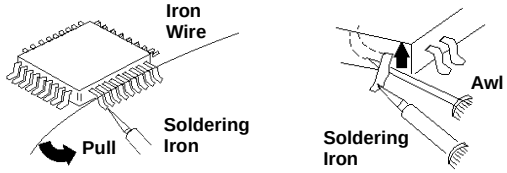
- Required Tools -

- Soldering iron
- De-solder braids
- Iron wire or small awl
- Magnifier

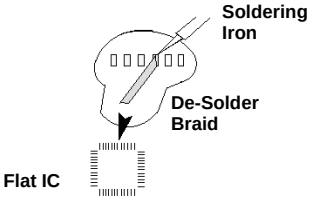
1. Remove the solder from all of the pins of a Flat-IC by using a de-solder braid.



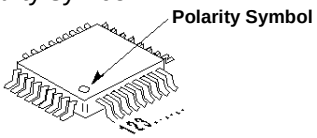
2. Put the iron wire under the pins of the Flat-IC and pull it in the direction indicated while heating the pins using a soldering iron. a small awl can be used instead of the iron wire.



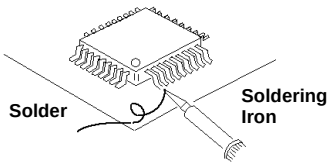
3. Remove the solder from all the pads of the Flat-IC by using a de-solder braid.



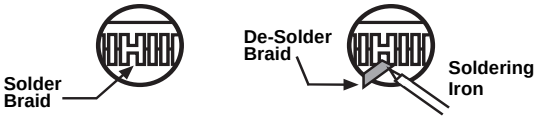
4. Position the new Flat-IC in place (apply the pins of the Flat-IC to the soldering pads where the pins need to be soldered). Properly determine the position of the soldering pads and pins by correctly aligning the polarity symbol.



5. Solder all pins to the soldering pads using a fine tipped soldering iron.



6. Check with a magnifier for solder bridge between the pins or for dry joint between pins and soldering pads. To remove a solder bridge, use a de-solder braid as shown in the figure below.



Service Notes (Continued)

IMPORTANT: To protect against possible damage to the solid state devices due to arcing or static discharge, make certain that all ground wires and CRT DAG wire are securely connected.

CAUTION: The power supply circuit is above earth ground and the chassis cannot be polarized. Use an isolation transformer when servicing the PTV to avoid damage to the test equipment or to the chassis. Connect the test equipment to the proper ground ((⏚) or (⏚)) when servicing, or incorrect voltages will be measured.

WARNING: This PTV has been designed to meet or exceed applicable safety and X-ray radiation protection as specified by government agencies and independent testing laboratories.

To maintain original product safety design standards relative to X-ray radiation and shock and fire hazard, parts indicated with the symbol ⚠ on the schematic must be replaced with identical parts. Order parts from the manufacturer's parts center using the parts numbers listed in this service manual, or provide the chassis number and the part reference number.

For optimum performance and readability, all other parts should be replaced with components of identical specification.

PTV Feature Table

FEATURE\MODEL	ALL MODELS
Chassis	P4D
Tunning system	144K
# of channels	181
Menu language	Eng
Closed Caption (CC)	X
V-Chip	X
75 Ω input	X
Antenna Input	X
Picture In Picture (PIP)	2T
Remote control #	EUR511155
Screen protector	X
Comb filter	3DIG Y/C
H. edge correction	W / VEC
New YNR	X
VM	X
Natural AI	X
Color temperature	X
V/A norm	Both
Dyn color/Peak white	X
Digital convergence	X
MTS/SAP/DBX	X
Bass/Bl/Treb control	X
AI sound	Simple
Spatializer	X
Dolby Ctr. CH In	X
Built-in audio power	10W/CH (10%)
# of speakers	4
A/V in (rear/front)	3/1
S-VHS in (rear/front)	2/0
A/V program out	X

Table 1: PTV Feature Table

FEATURE\MODEL	ALL MODELS
Fixed & Variable audio out	X
DTV input (Y, Pb, Pr)	2
Dimensions mm WxDxH in	51" 1097x632x1328 43.2x24.9x52.3
	61" 1316x704x1516 51.8x27.7x59.7
Weight (kg/lbs)	51" - 94/207
	61" - 112/248
Power source (V/Hz)	120/60
Anode voltage	31.5kV ± 1.0kV
Video input jack	$1V_{p-p}$ 75Ω, phono jack
Audio input jack	500mV RMS 47kΩ

Table 1: PTV Feature Table (Continued)

Specifications are subject to change without notice or obligation. Dimensions and weights are approximate.

PCB Designation

No.	BOARD	PARTS No.	FUNCTION
1	A-Board	TNPH0275	Signal mother
2	N-Board	TNP2AA027AB	VIF,MTS
3	J-Board	TNPA1410	AV SW AUDIO AMP etc.
4	YC-Board	TNPA1364	3D Y/C
5	DP-Board	TNPA1604AB	AMDP
6	DC-Board	TNPA1507	DIGITAL CONV.
7	X-Board	TNPA1411	RGB Signal Syncout
8	B-Board	TNPH0276	POWER
9	D-Board	TNPA1412	DM H.DRIVE
10	T-Board	TNP2AA045	SUB POWER
11	R-Board	TNPA0615	Remocon photo sensor
12	K-Board	TNP2AA050AB	CONTROL PANEL
13	G-Board	TNP2AA049AB	INPUT TERMINAL(front)
14	LR-Board	TNPA1360AC	CRT-neck red
15	LG-Board	TNPA1361AC	CRT-neck green
16	LB-Board	TNPA1362AC	CRT-neck blue
17	SR-Board	TNPA1496AB	VM red
18	SG-Board	TNPA1497AB	VM green
19	SB-Board	TNPA1498AB	VM blue
20	H-Board	TNPA1559	AV TERMINAL(YUV)

Table 2: PCB Designation

Note: The YC, DP & DC-Boards *(TNPA1364, TNPA1604AB, & TNPA1507 respectively) are* ***Non-Serviceable.*** *If either board is defective, replace the board with a new one, and return the defective*

PTV - Location of Controls

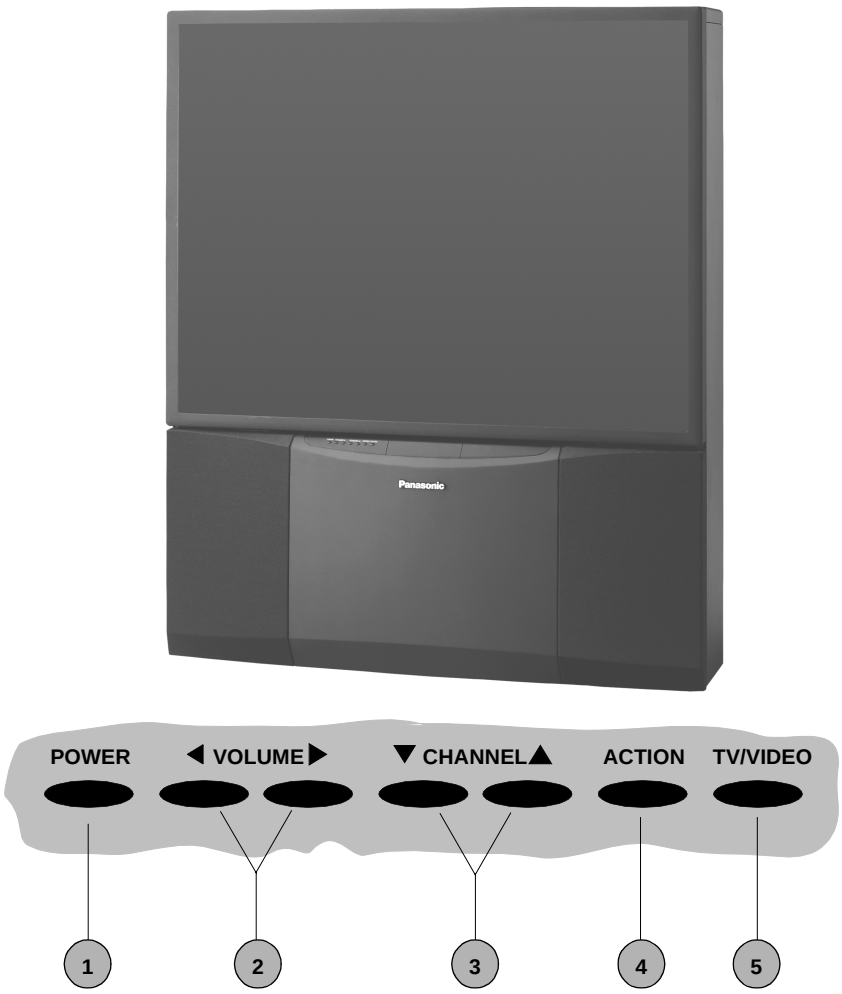


Figure 5. Location of Controls PTV

Quick Reference Control Operation	
1	**Power -** Press to turn ON or OFF.
2	**Volume -** Press to adjust Sound Level, or to adjust Audio Menus, Video Menus, and select operating features when menus are displayed
3	**Channel -** Press to select programmed channels. Press to highlight desired features when menus are displayed. Also use to select Cable Converter box channels after programming Remote Control Infra-red codes (the TV/AUX/CABLE switch must be set in CABLE position).
4	**Action -** Press to display Main Menu and access On Screen feature and Adjustment Menus.
5	**TV/Video -** Press to select TV or one of two Video Inputs, for the Main Picture or the PIP frame (when PIP frame is displayed).

Remote - Location of Controls

POWER Button
Press to turn ON and OFF.
MUTE Button
Press to mute sound. A second press resumes sound. Press also to access and delete Closed Caption display.
VCR, DVD, AUX, RCVR TV, DTV, CBL&DBS Buttons
Component function buttons
VOL (volume) Buttons
Press to adjust TV sound level. Use with Channel buttons to navigate in menus.
R-TUNE (Rapid Tune) Button.
Press to switch to the previous channel.
ACTION Button
Press to display Main Menu and access or exit On Screen features and Adjustment Menus.
REW, PLAY, FF, TV/VCR, STOP, PAUSE, REC & VCR CHANNEL Buttons
Component function buttons.
DBS EXIT& DBS GUIDE Buttons
DBS function buttons.

EUR511155

Figure 6. Location of Controls (Remote)

For additional information for this remote please refer to the Remote Guide, listed on the parts list.

Chassis & Boards Layout

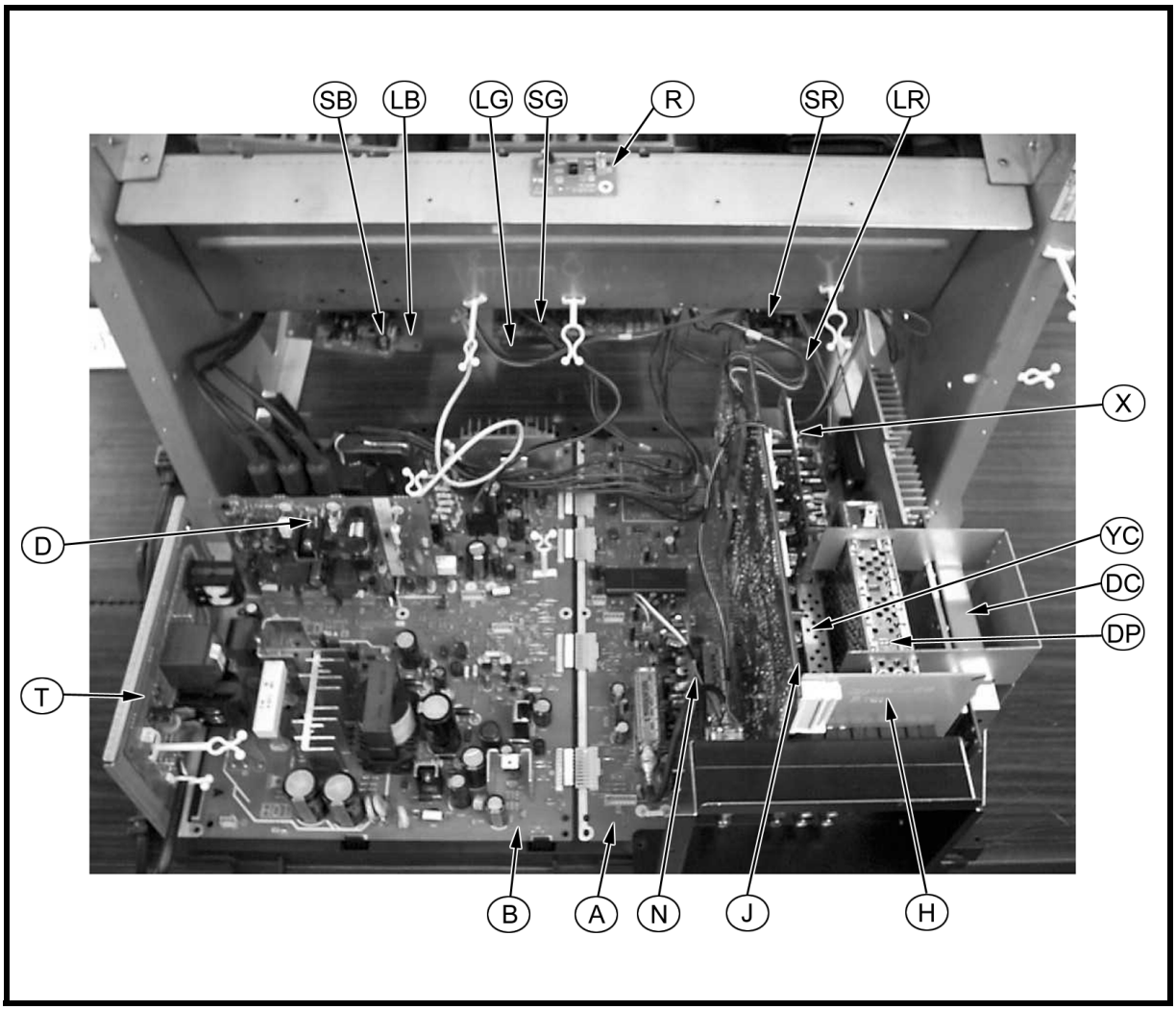


Figure 7. Chassis & Boards Layout.

Board Description			
A	Main Chassis - MPU, Convergence Amp. & Voltage Regulation	G	Front A/V Connectors (located on Keyboard assembly)
B	Switching Power Supply, Horizontal Deflection & High Voltage Protector, Vertical stop blanking	K	Customer Control Keyboard (located on Keyboard assembly)
D	EHT protector, Diode Modulation drive	LB	Blue CRT Output
J	A/V Terminals, VAO, Audio Amp, Horizontal Deflection	LG	Green CRT Output
X	RGB Signal processor, sync out	LR	Red CRT Output
N	VIF, MTS	R	Remote Control Board
T	Line Filter	H	Rear A/V (Y, Pb, Pr) Connectors
DP	Digital Signal processor	SB	Blue VM Output
DC	Digital Convergence	SG	Green VM Output
YC	Digital 3 Dimension Comb Filter	SR	Red VM Output

Non-Serviceable Boards

Disassembly for Service

Note: *Board ground wires may have to be disconnected to disassemble some boards. All ground wires must be reconnected using jumper leads, if necessary, before power is applied to PTV for service.*

Front Decorative Panels Removal

(Figure 8.)

1. The Speakers Front Decorative Panels are secured with velcro. Grip each panel from the sides and gently pull forward to remove. When reassembling, make certain to firmly press on the panels where the velcro is located and confirm that the panels are properly secured in place.
2. The Front Cover is secured by 2 screws.

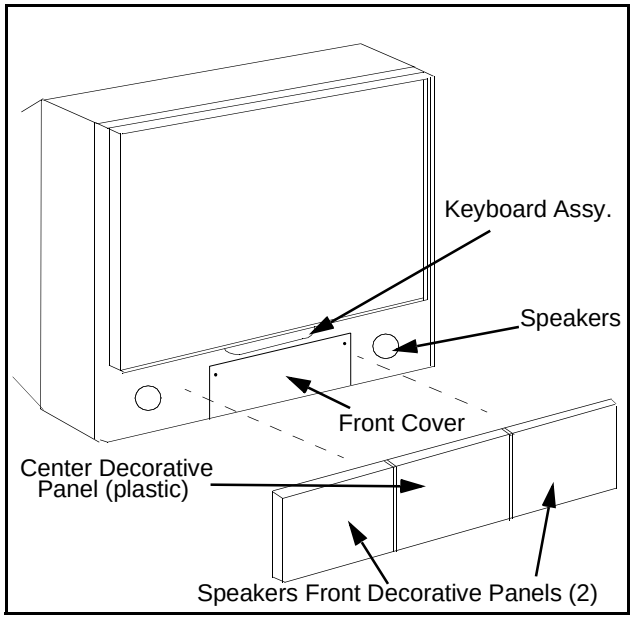


Figure 8. Panel Removal.

Screen Frame & Keyboard Removal

(Figure 9)

1. Remove the three front decorative panels. (see Figure 8)
2. Unplug the cables (2) from the Keyboard assembly. Remove the 2 screws from the Keyboard assembly. Tilt the Keyboard assembly upward and release it from the screen frame assembly.
3. Remove 5 screws from the bottom edge of the frame.
4. Grasp the frame on the sides at the bottom. Pull forward at bottom, push up frame then pull out top edge.

Note: *For Parts Numbers, please refer to Parts List on this Manual*

Screen Assembly

(Figure 10)

1. Place frame face down on soft surface.
2. Remove screen brackets from 4 sides (3 brackets at each side, on bracket at top and bottom edge.)
3. Note exact orientation of each screen. The orientation and order of the screens is critical for projecting pictures properly. Detailed screen assembly can be seen in Figure 11.

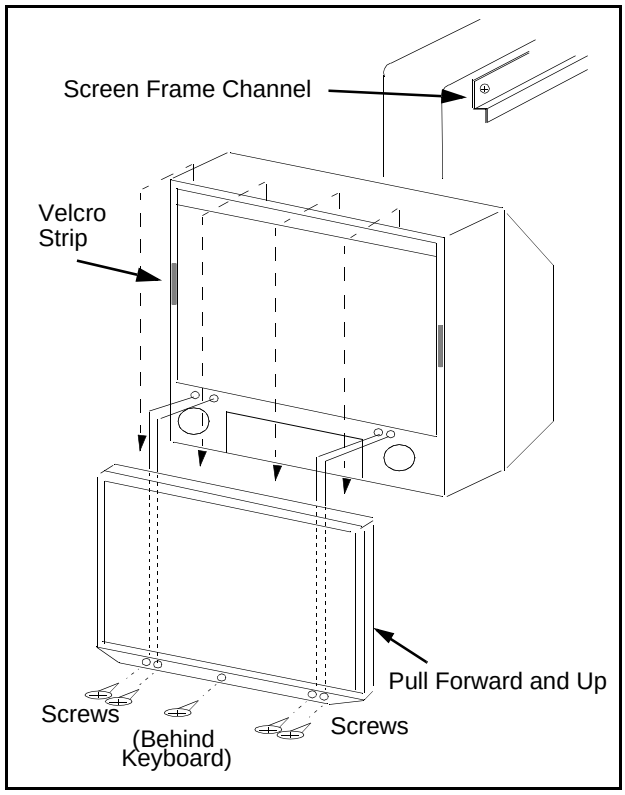


Figure 9. Screen Frame Assembly.

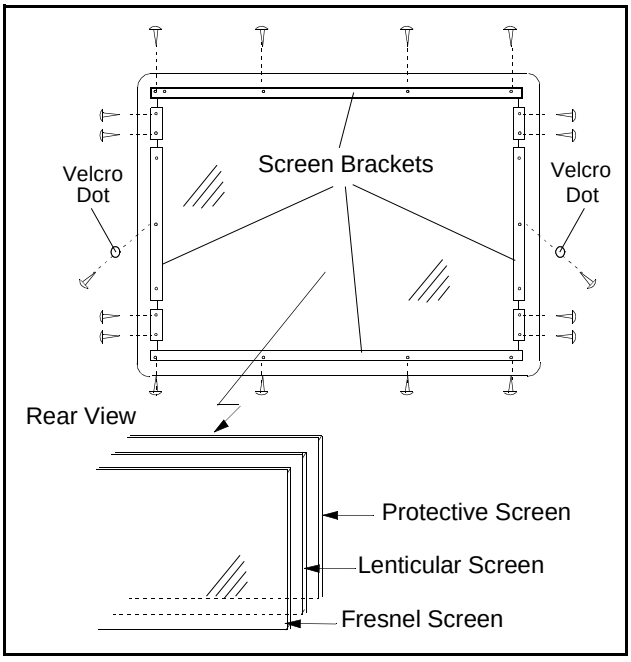


Figure 10. Screen Assembly

Disassembly for Service (Continued)

PTV Screen Assemblies

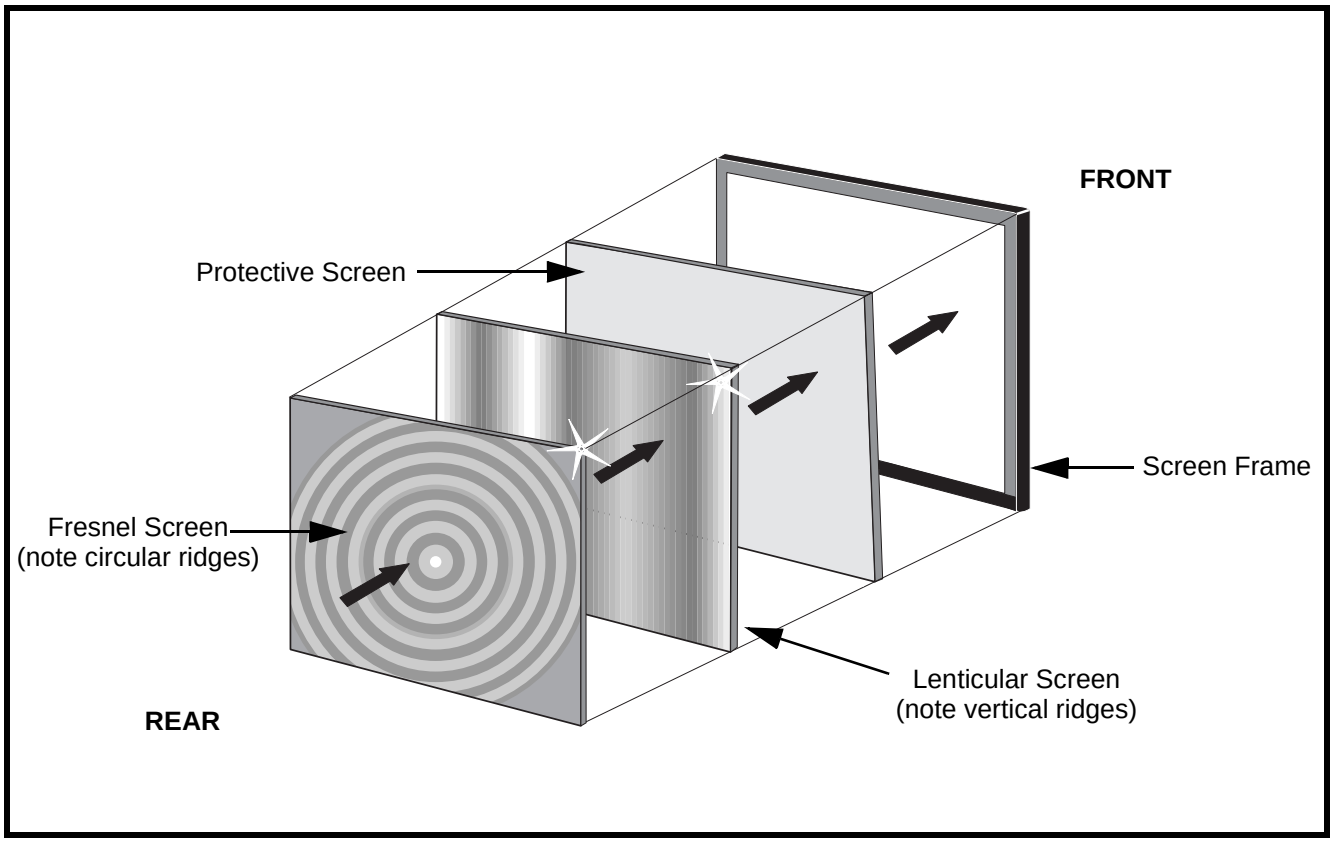


Figure 11. Screen Assemblies

Note: *For Parts Numbers, please refer to Parts List on this Manual*

Disassembly for Service (Continued)

Speakers Replacement

1. Remove the speakers decorative panels. (see Figure 8)
2. Each left and right speaker set are secured to the cabinet with (4) screws.
3. Disconnect the R & L speaker lead connectors from the speaker units.

Bottom Back Cover Removal

(Figure 12)

1. Remove (8) hex screws around its perimeter (marked with arrows).
2. Remove (3) screws from around the A/V terminal board (marked with arrows).

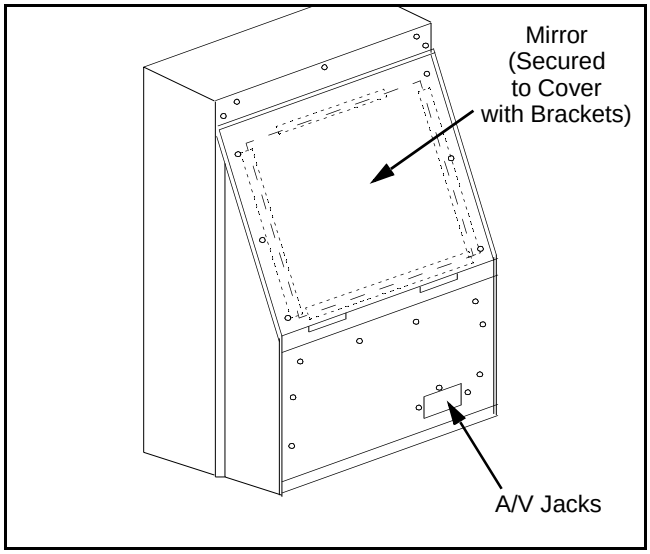


Figure 12. Back Covers Removal

Top Back Cover Removal

(Figure 12)

1. The top back cover is secured with (6) screws around its perimeter.
2. Lift bottom cover up and pull out at the bottom.
3. Be careful not to damage the mirror attached to the underside of cover.

Main Chassis Block

(Figure 13)

1. Remove 3 front decorative panels and front cover. (Figure 8)
2. Remove the bottom back cover. (Figure 12)
3. The main chassis block is secured to the cabinet by (4) screws (2 at front, behind the center decorative panel, 4 inside on bottom of optical frame).
4. Remove the horizontal barrier panel at the back of the cabinet.
5. Remove wires (K1, G1 and speaker connectors, X7 & X8 on X-Board) and pull out the main chassis block.

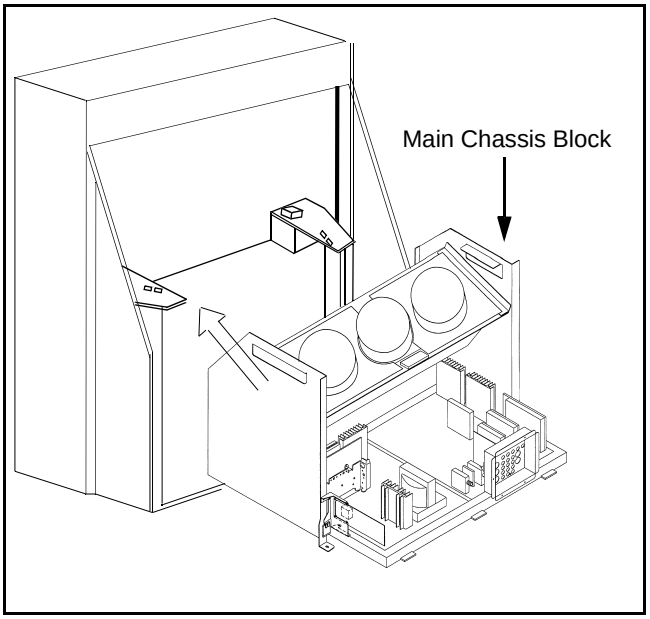


Figure 13. Chassis Removal

Note: *Main Chassis block can be serviced either in normal position or laying on its back (Protect hookup terminal from damage).*

Note: *For Parts Numbers, please refer to Parts List on this Manual*

Disassembly for Service (Continued)

Disassembly for CRT Replacement

To facilitate CRT replacement, the complete CRT mounting chassis does not need to be removed.

1. Remove the main chassis block from the cabinet (Figure 13),
2. Remove the Optical bracket metal cover (rear side) by removing (6) screws from back, (2) screws from top, and (2) screws from each side. (Figure 14)

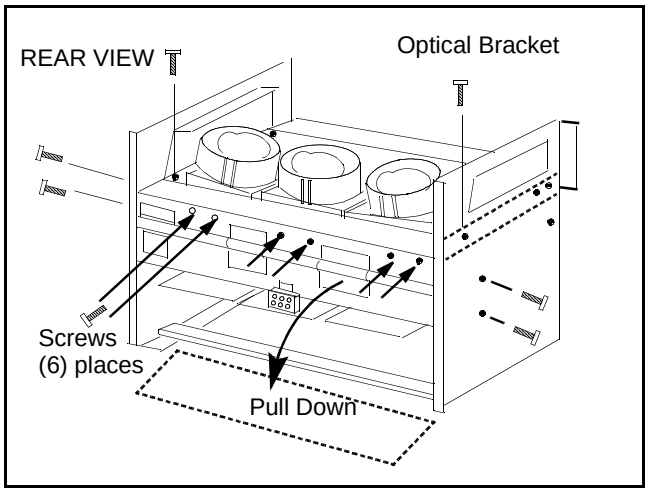


Figure 14. CRT Replacement

3. Remove the defective CRT anode lead from the high voltage distributor block that is mounted on the Flyback Transformer. Discharge to CRT chassis.
4. Unplug connectors from the B-Board. (See board layout.) B9 for red, B10 for green, or B11 for blue.
5. Unplug the defective CRT black DAG ground connector from the CRT Board.
6. Remove the CRT Board from the defective CRT neck.
7. Remove (2) screws from the defective CRT housing (Figure 15).**

   CAUTION: Do not remove the (4) CRT lens screws.

8. Release CRT anode lead from CRT chassis wire clamp and all other wires from holders.
9. Loosen a screw that secured the DY and remove it from the CRT neck.

X-RAYS SHIELD ⚠

1. To insure X-Rays radiation protection, the lens must be mounted in place at all times when power is applied to the PTV

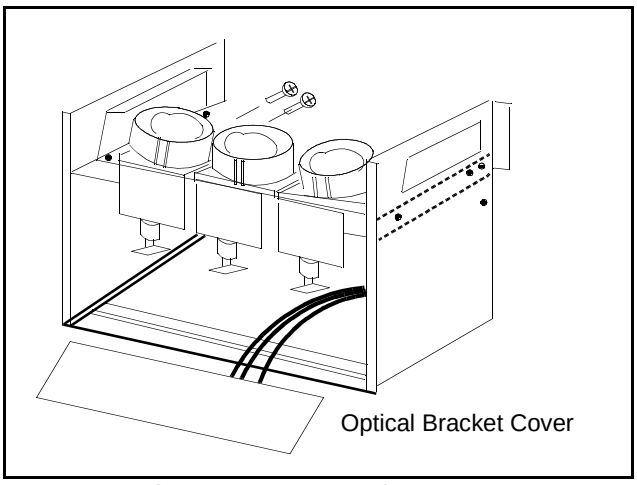


Figure 15. CRT Replacement.

**** CAUTION:** Support the CRT Assembly when loosening screws.

CRT Replacement

1. Remove CRT focus lens assembly (4 screws).

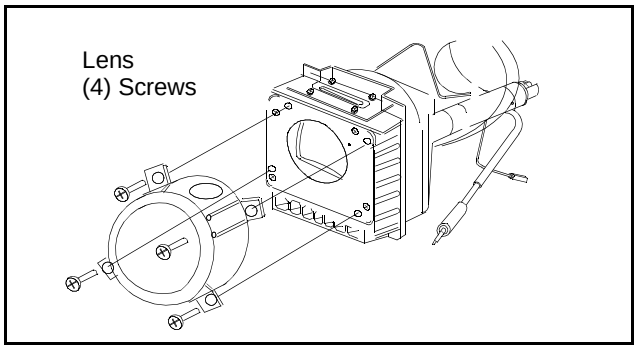


Figure 16. CRT Assembly.

2. Lay CRT face down on a soft cloth.
3. Note position of yoke with centering tabs and remove from defective CRT.
4. Remove CRT DAG ground from defective CRT. Mount it on the replacement CRT exactly as it was on the defective CRT.

   Note: *Replacement CRT is supplied with H.V. anode lead attached.*

5. Wire the anode lead wire.

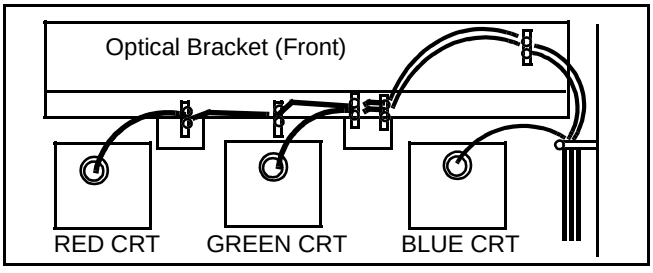


Figure 17. Wire Guide.

6. Install yoke with other CRT neck assemblies on CRT neck in the same order and position as removed from the defective CRT.
7. Press yoke against bell of CRT and tighten the clamp just snug enough so it will not easily shift.
8. Assemble CRT focus lens assembly to new CRT with (4) screws. Make sure focus lens adjustment nut is in the same location as on other CRT focus lens

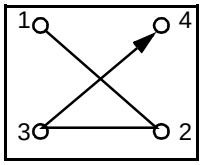


Figure 18. CRT Screw Tightening Order.

Note: *Please assemble with screws in the order shown and tighten with the same torque.*

Optical Block Position Adjustment

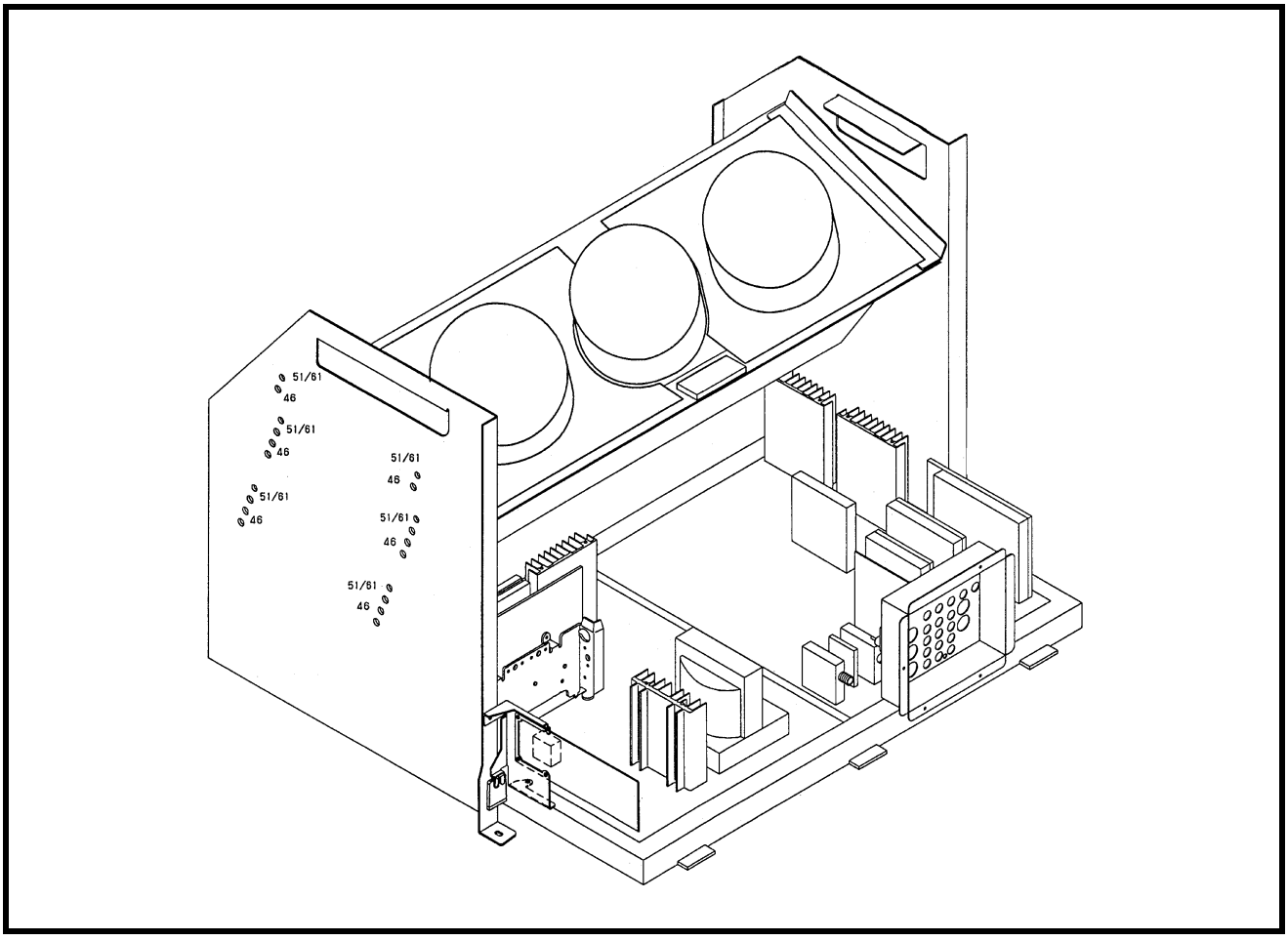


Figure 19. Optical Block Position.

The optical block mounting has holes to allow for the different size projection screens. These mounts will adjust to 61 inch & 51 inch projection screens.

If the optical block is removed for service or is replaced, it is important that the correct mounting holes are used.

B+ Voltages Table

Preparation:
Set the following controls

Picture..... Normal.
Bright ..... Normal.
Volume ..... Min. (0).

Procedure:

1. Apply a monoscope pattern.
2. Connect the (-) Lead of the Digital Voltmeter to TPGND1 (Cold Ground) on B-Board.
3. Connect the (+) Lead of the Digital Voltmeter to Test Point (On B-Board) and confirm the B+ Voltages (See Table 3).

Only No.6 in Table 3:

4. Connect the (+) Lead of the Digital Voltmeter to TP16 (On B-Board) and the (-) Lead of the Digital Voltmeter to TP16N (On B-Board).

No.	Test Point	Voltage
1	TP140	138.5±1.0
2	TP15	15.0±1.0
3	TP7	7.0±0.5
4	TP23	22.5±1.0
5	TP23N	-23.5±1.0
6	TP16-TP16N	32.0±1.0

Table 3: B+ Voltages Table

CRT Set Up

CAUTION: Insure yoke plugs on the A-Board are reconnected before turning the PTV ON to prevent damage to the horizontal output transistor and/or CRTs.

1. Connect test generator to the antenna terminal and set for a monoscope pattern.
2. Loosen yoke clamp, seat yoke against bell of CRT and rotate to correct yoke tilt (compare to adjacent CRT). Tighten yoke clamp.
3. Remove adhesive from centering tabs and set centering tabs for zero correction. (Figure 20)

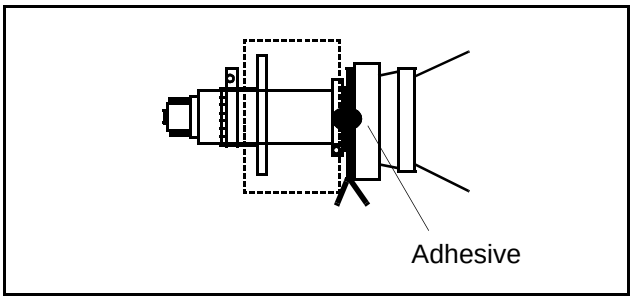


Figure 20. Adhesive Removal

4. Cover replacement CRT lens and static converge the tubes not replaced, if needed. Check size and linearity of pattern and adjust as required.
5. Uncover replacement CRT lens and cover other two CRT lenses. Adjust electrical and optical focus (lens), if required.
6. Uncover all CRT lenses and use yoke centering magnet to converge replacement CRT (in center area of screen only) with other two CRTs. Disregard non-convergence in areas other than center area.
7. Perform White Balance adjustments.

Centering Magnets Adjustment

(Perform this adjustment when a CRT is replaced or when major adjustment is required)

Preparation:

1. Helmholtz magnetic field
2. Marked center panel
3. Enter Serviceman Mode.
4. In Serviceman Menu select D-0D using channel up&down buttons of Remote control.
   Change the DAC data of D-0D from [0] to [1] using Volume up&down bottoms of Remote Control and confirm disabled convergence.

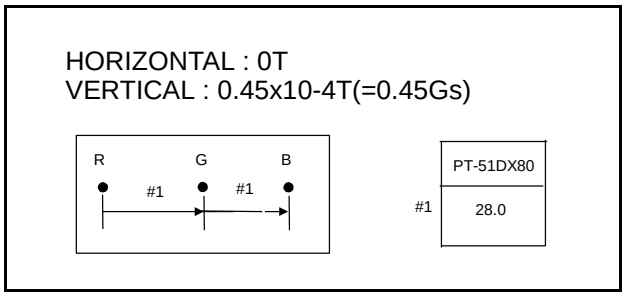


Figure 21. Centering Magnet Adjustment

Procedure:

1. Apply NTSC cross hatch pattern.
2. Confirm that horizontal center line of cross hatch pattern is perfectly horizontal. (R, G and B) if the center line is not horizontal, adjust deflection yoke.
3. Apply NTSC indian head pattern and cover lenses of R and B.
4. Adjust centering magnet of green so that the center of indian head pattern matches the center of screen.
5. Move caps to cover lenses from red to green.
6. Adjust centering magnet of red so that center of indian head pattern matches the position of the green left 28.0mm (See Figure 21).
7. Move caps to cover lenses from blue to red.
8. Adjust centering magnet of blue so that center of indian head pattern matches the position of the green right 28.0mm (See Figure 21).
9. Remove caps to cover lenses from green and red.

Note: *Loosen screw of deflection yoke, before deflection yoke adjustment.*
Tighten the screw pushing deflection yoke to CRT cone.
Horizontal center line is inside 2mm vertically from screen frame marker.
The center of indian head pattern is inside a radius 3mm from marker.

Deflection Yoke Angle

(Perform this adjustment when a CRT is replaced or when major adjustment is required)

Preparation:

1. Enter Serviceman Mode.
2. In Serviceman Menu select D-0D using Channel up&down buttons in Remote Control.
   Change the DAC data of D-0D from [0] to [1] using Volume up&down buttons in Remote Control and confirm disabled convergence.

Procedure:

1. Apply NTSC cross hatch pattern.
2. Adjust electrical and optical focus of red, green and blue so that focus is best at the center of screen.
3. Push power key 3 times and confirm the mode is 'D'.
4. Cover red and blue lenses and project only green.
5. Adjust angle of deflection yoke (G) so that the horizontal center line of cross hatch pattern is perfectly horizontal to screen frame.

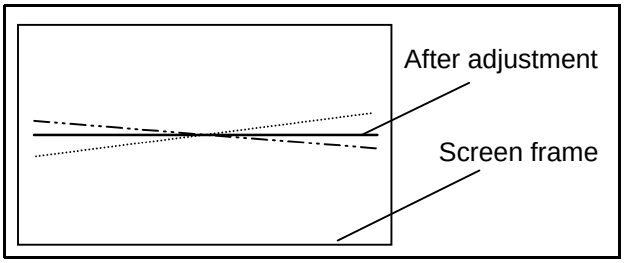
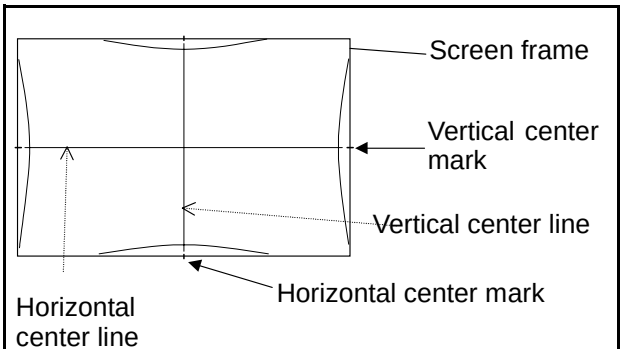


Figure 22. Deflection Yoke (Green) Angle Adjustment

6. Adjust angle of other DY (R and B) in a similar way (move lens cover and project only red or only blue).
7. Cover red and blue lenses and project only green.
8. Confirm indication of 'D' mode and set D-01 (v liniality) by channel up_down key.
9. Set [15] to DAC data of D-01 using volume up&down Buttons.
10. Adjust centering magnets as following (rough adjustment).



1) Adjust so that h_center line overlaps with vertical center mark.
2) Adjust so that v_center line overlaps with horizontal center mark.

Figure 23. Centering Magnet Adjustment

Electric Focus Adjustment

(Perform this adjustment when a CRT is replaced or when major adjustment is required)

Preparation:

1. NTSC indian head pattern
2. NTSC cross hatch pattern with dot
3. Confirm 'D' mode and change DAC data of D-0D from [0] to [1] (Disabled convergence).
4. Set each longer knob of four-pole magnet to 90 degrees (see Figure 25 / No corrective condition).
5. Put each longer knob of alignment magnet together and put each longer knob of dummy ring together (see Figure 26 / No corrective condition)

.

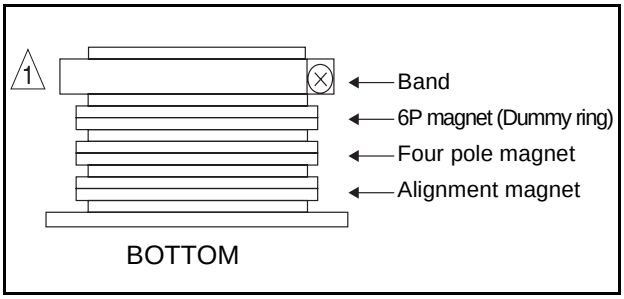


Figure 24. VM coil with focus correct magnet

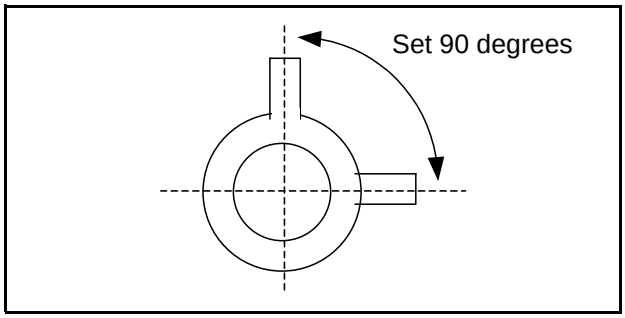


Figure 25. Four-pole magnet

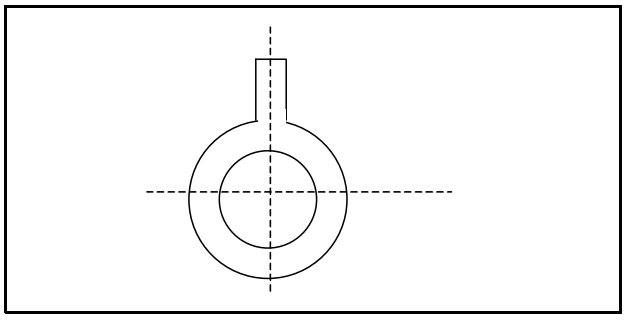


Figure 26. alignment magnet or dummy ring

Procedure:

1. Apply NTSC cross hatch pattern with dot.
2. Cover Green and Blue lens. Project Red only.
3. Turn the Red electrical focus adjustment VR to the end of counterclockwise and confirm the position of dot on the center of picture.
4. Turn the Red electrical focus adjustment VR to the end of clockwise. If the position of dot on center of picture moves from the position of step 3, adjust alignment magnets that the position of dot on center of picture is the same as the position of step 3.
5. Turn the electrical focus adjustment VR to the end of counterclockwise. Confirm that the position of dot on center of picture doesn't move from the position of step 4. If the position of dot on center of picture moves, repeat step 3 to step 5. If the position of dot on center of picture moves after repeating adjustment, adjust so that the movement of dot is minimum.
6. Turn the Red electrical focus adjustment VR to the end of clockwise.
7. Adjust the four pole magnets so that the shape of the dot on center of picture is just circular.
8. Obtain the best red electrical focus with Red electrical focus adjustment VR.
9. Apply NTSC Indian Head pattern.
10. If the center of Indian Head pattern is not in f 15.0 mm circle that shown Figure 27, adjust centering magnets that the center of Indian Head pattern is in f 15.0 mm circle that shown Figure 27 and repeat alignment magnet adjustment and four pole magnet adjustment again (repeat step 1 to step 8).

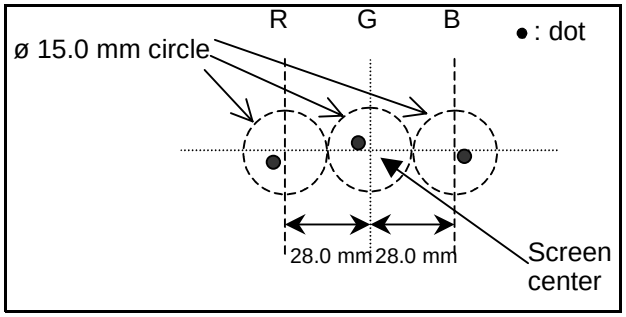


Figure 27. Electric Focus Adjustment

11. Apply NTSC cross hatch pattern with dot.
12. Cover Red and Blue lens. Project Green only.
13. Repeat step 3 to step 10 for the Green electrical focus.
14. Cover Red and Green lens. Project Blue only.
15. Repeat step 3 to step 10 for the Blue electrical focus.
16. Change DAC data of D-0D from [1] to [0]. (convergence ON).

After adjustment, paint centering magnets of DY, dummy rings of VM coil, four pole magnets of VM coil and alignment magnets of VM coil to fix.

Dynamic Focus Adjustments

1. Focus adjustments should be performed after 1 hour of aging.
2. Use oscilloscope with 100:1 probe.
3. Apply monoscope pattern.
4. Adjust the red, blue and green focus VR on the focus block for best focus of overall picture of each CRT. (Figure 30)

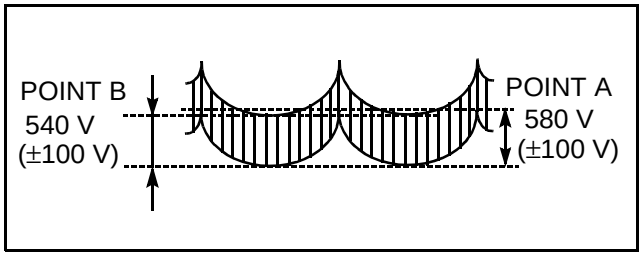


Figure 28. D. Focus Adjustment Waveform

5. Connect the scope probe to TPB20, GND to TPB21. Scope set at 20V/div & 5m sec/div.
6. Confirm waveform as shown in Figure 28
7. Proceed with Focus Adjustments.

Focus - Electrical & Optical Adjustments

(use for minor adjustment or for final adjustment, for complete adjustment see following section.)

Electrical Adjustment

1. Apply NTSC monoscope pattern.

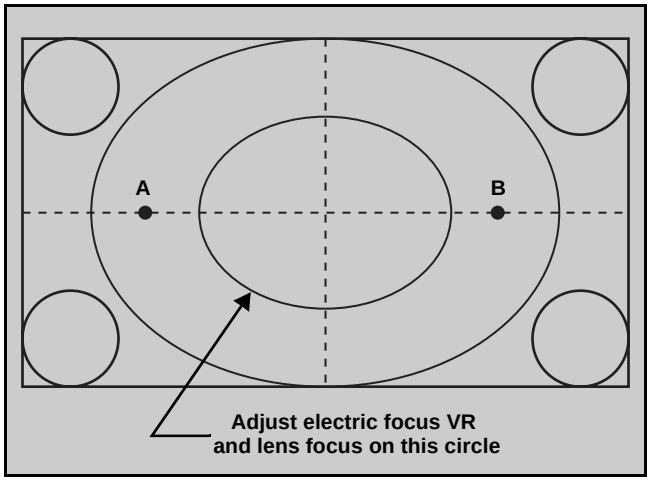


Figure 29. Lens focus adjustment

Table 4: Focus Points

	RED	GREEN	BLUE
Electric focus	B	A/B	A
Optical Focus	B	A/B	A

2. Cover the green and blue CRTs, projecting red only. The electrical focus controls are located on the front (Figure 29). Adjust the red focus VR for best focus as indicated in Table 4).

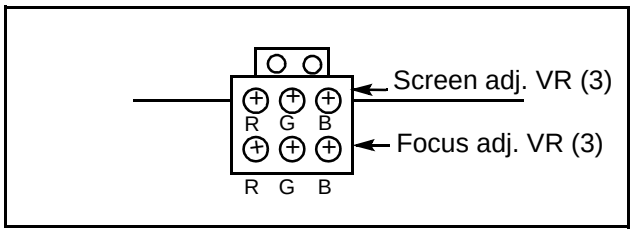


Figure 30. Focus Pack

3. Adjust red lens focus (mechanical) until focus is best.
4. Adjust red focus VR again.
5. Repeat for blue focus VR while projecting blue only.
6. Repeat for green.

Focus - Optical Lens Adjustment

Optical Adjustments

Note: *This adjustment normally should not require resetting unless the lens has been replaced or adjustment has changed.*

1. Optical focus adjustment is located on the top of each CRT lens system. Loosen the adjustment knurled locking knob. (Figure 31)

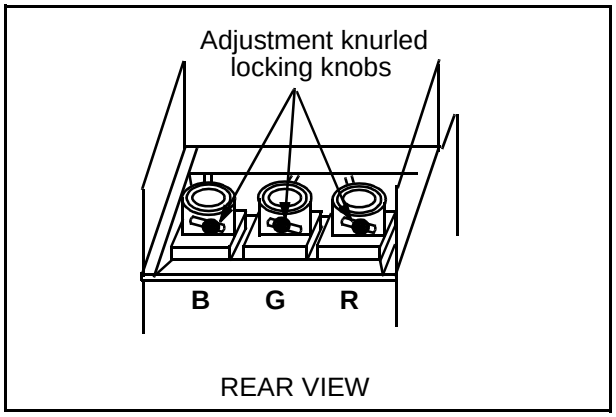


Figure 31. Optical Lens focus Adjustment

2. Turn the PTV ON. Apply and view a monoscope pattern.
3. Adjust each lens focus for best focus while viewing each CRT.
4. Cover the red and blue CRT, projecting green only. Rotate the green lens for best focus around screen center area.
5. Do the same for the red focus lens while projecting red only.
6. Repeat for blue.

Note: *Please See "Serviceman Mode (Electronic Controls)" on page 27 for entering and existing Serviceman Mode.*

Horizontal Phase Adjustment

Preparation:

1. Enter Serviceman Mode.
2. In Serviceman Menu select D-0D using channel up&down Buttons in Remote control.
   Change the DAC data of D-0D from [0] to [1] using Volume up&down buttons of Remote and confirm disabled convergence.

Procedure:

1. Apply NTSC indian head pattern.
2. Confirm 'D' mode.
3. In Serviceman Menu select D-05 using Channel up&down Buttons in Remote.
   Set [63] to DAC data of D-05 (H size is minimum) using Volume keys.
4. Turn up screen volume of green to clockwise until the all deflecting area appear.
5. Select D-09 (H position) by channel up key.
   Adjust H position as following by audio volume key.

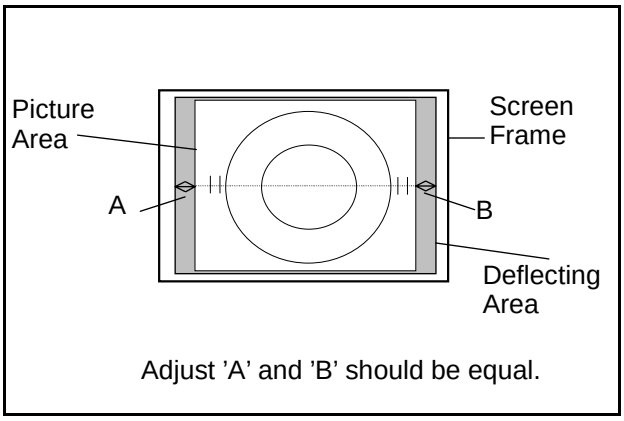


Figure 32. Horizontal Phase Adjustment

6. Turn screen volume of green to counter clockwise until the between deflecting area and picture area disappear.

Trapezoid Adjustment

Preparation:

1. Enter Serviceman mode.
2. In Serviceman menu, select D-0D using Channel up&down buttons in remote Control.
   Change the DAC data of D-0D from [0] to [1] using Volume up&down keys and confirm disabled convergence.

Procedure:

1. Apply NTSC cross hatch pattern and confirm indication of 'D' mode.
2. Select D-05 (H size) with Channel up&down keys. Adjust H size using Volume up&down keys, so that the left line of cross hatch come to near left side of screen frame.
3. Set D-00 (V size) with Channel down key. Adjust V size with Volume keys so that the top and bottom line of cross hatch appear.

4. In Serviceman menu, select D-03 (trapezoid) with Channel Up&Down.
   Correct trapezoid as following using Volume buttons.

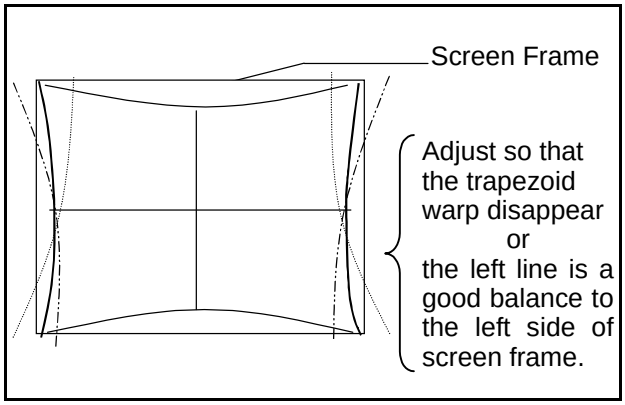


Figure 33. Trapezoid Adjustment

Vertical Liniality Adjustment

Preparation:

1. Enter Serviceman mode.
2. In Serviceman menu select D-0D using Channel up&down buttons of remote control.
   Change the DAC data of D-0D from [0] to [1] using Volume up&down buttons of remote control and confirm disabled convergence.

Procedure:

1. In Serviceman Menu select D-01 (V liniality) using Channel Up&Down keys.
2. Confirm that the DAC data of D-01 is [15] and following space is about equal.

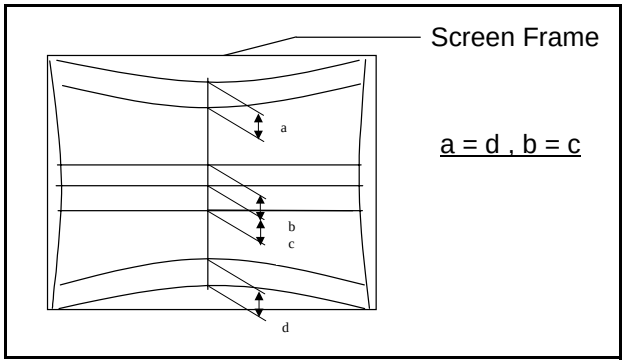


Figure 34. Vertical Lineality Adjustment

3. If the space is not equal, adjust V liniality (D-01) by audio volume key.

Vertical Size Adjustment

(Perform this adjustment when a CRT is replaced or when major adjustment is required)

Preparation:

1. Enter Serviceman Menu.
2. In Serviceman Menu select D-0D using Channel up&down buttons of remote control.
   Change the DAC data of D-0D from [0] to [1] using Volume up&down buttons and confirm disabled convergence.

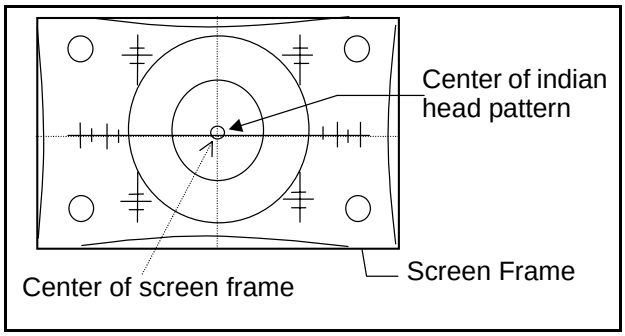


Figure 35. Centering Magnet Adjustment

Procedure:

1. Apply indian head pattern
2. Adjust centering magnets so that the center of indian head pattern comes to center of screen frame.
3. In Serviceman Menu select D-00 (V size) by channel keys and adjust V size as following. See Figure 36.

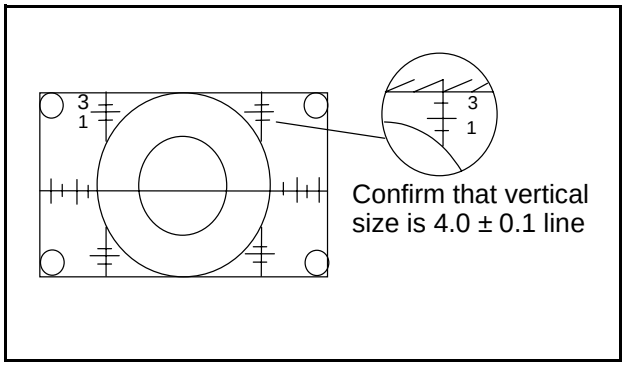


Figure 36. Vertical Size Adjustment

Horizontal Size Adjustment

(Perform this adjustment when a CRT is replaced or when major adjustment is required)

Preparation:

1. Enter Serviceman Mode.
2. In Serviceman Menu select D-0D using Channel up&down buttons of remote control.
   Change the DAC data of D-0D from [0] to [1] with Volume up&down keys of remote control and confirm disabled convergence.

Procedure:

1. Apply indian head pattern.
2. In Serviceman Menu select D-05 (H size) with channel keys and adjust H size as following using Volume up&down keys, confirm that horizontal size is 2.75 ± 0.2 line at left side in the figure.

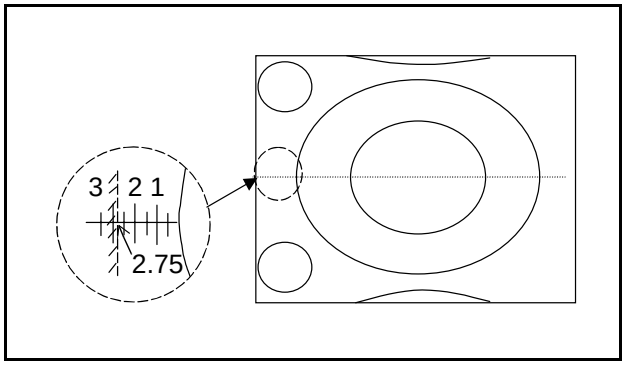


Figure 37. Horizontal Size Adjustment

3. Remove caps to cover lenses from red and blue.

Pincushion Adjustment

Preparation:

1. Enter Serviceman Menu.
2. In Serviceman Menu select D-0D with Channel up&down buttons of remote control.
   Change the DAC data of D-0D from [0] to [1] with Volume up&down buttons of remote control, and confirm disabled convergence.

Procedure:

1. In Serviceman menu select D-07 (pincushion) with Channel up&down keys.
   Adjust pincushion as following with Volume keys

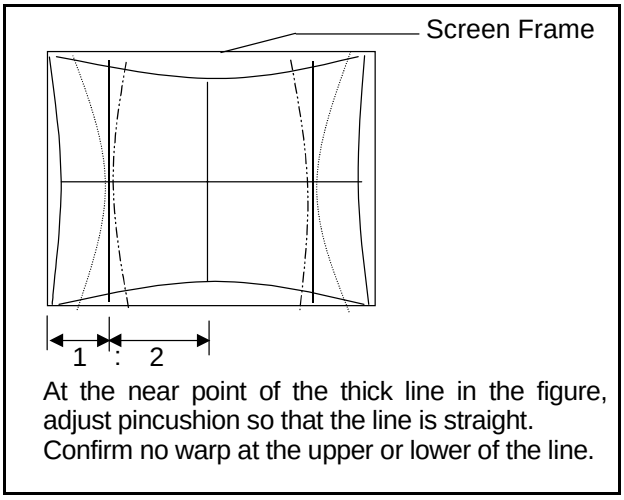


Figure 38. Pincushion Adjustment

2. If the trapezoid warp appears after adjustment of pincushion, Perform Trapezoid adjustment (See “Trapezoid Adjustment” on page 21).

Convergence Alignment Template

The **Convergence Alignment Template** is a grid approximately the size of the viewing screen used to ensure the proper size and shape of the alignment rasters. It is 12 blocks across by 8 blocks high. The grid dimensions vary with the mode of operation.

Apply a **Convergence Alignment Template** to the viewing screen of the PTV. Make sure the center lines are properly aligned. If a template is not available, one can be created by following the instructions below.

Create a Convergence Alignment Template by drawing a pattern, as in Figure 39, in the actual dimensions on transparent film or tracing paper. Start with the Horizontal and Vertical Center Axis and work outwards until the pattern is complete. Pay attention to the actual dimensions of the pattern.

Grid Dimensions:

51" Models: 85.5mm Horizontal X 93mm Vertical.
61" Models: 102.8mm Horizontal X 111.2mm Vertical.

Note: *A convergence alignment template, part number TQD2AA19013, is available through Matsushita/Panasonic Services.*

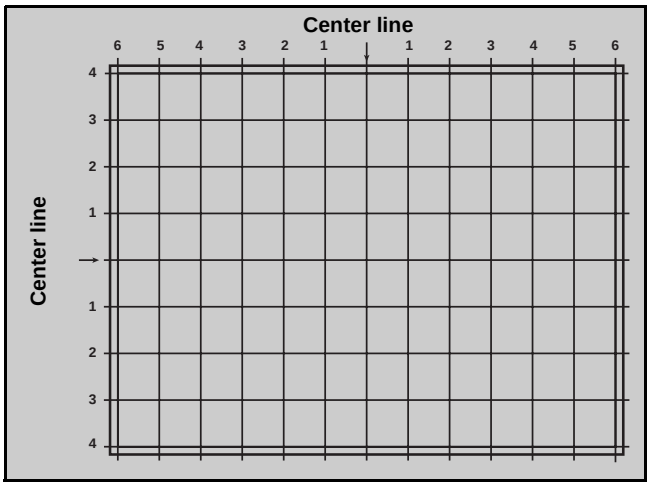


Figure 39. Convergence adjustment grid

Note: *There are 6 lines to the left and 6 lines to the right of the horizontal center line. There are 4 lines above and 4 lines below the vertical center line.*

Convergence Adjustment (manual)

Turn PTV on and allow it to warm up for 30 minutes prior to making adjustments.

Note: *This PTV uses the scheme described below to correct for misconvergence of the three CRT projection tubes. There are various modes to this operation. Easy 1 mode is to be used during factory setting only.* ***Do not use Easy 1 mode for converging the PTV in the field.*** *If, during service, Easy 1 mode is selected, exit this setting without changing or saving the data. If data is altered, it will overwrite convergence data with calculated values. this will result in a long convergence procedure. When servicing, use only the LINE, EASY 2 and POINT modes.*

Preparation:

Place the Convergence Alignment Template (see "Convergence Alignment Template" on page 24) over the PTV screen. Align the center lines of the template with the mechanical center markers on the PTV screen frame. If the template is not available, create one using the dimensions provided in "Convergence Alignment Template" on page 24.
Set all static convergence data to 0.
Remote control must be used for the procedure.

Note: *Apply the Convergence Alignment Template to the PTV screen frame to converge the* ***Green Raster only****. Remove the Convergence Alignment Template following this alignment. The red and blue rasters can then be aligned to the green raster.*

Procedure:

Raster Setup:

1. Apply an NTSC monoscope, line or dot pattern.
2. Mark center of raster as a reference.
3. From Serviceman Mode select V1 DAC. Then press "VOL" left or right to enter the convergence adjustment mode.
4. Press "3" to display the **green** raster.
5. Press "0" then "SWAP" to display test position adjustments.
6. Press "5" to display the pattern superimposed.
7. Line up the cross-hair cursor with the center of the pattern (See Figure 40 and Figure 41). Use "CH" up or down or "VOL" left or right to move the cross hatch pattern.

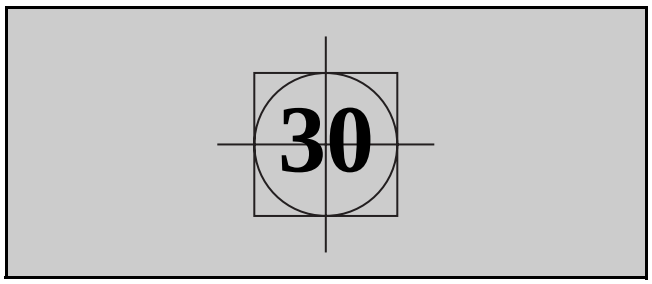


Figure 40. Aligning cross-hair cursor with monoscope pattern

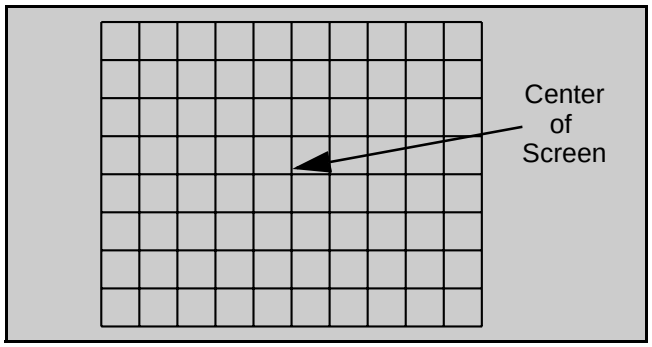


Figure 41. Aligning cross-hair cursor with line pattern

8. Press “5” to exit superimposed mode.
9. Press “TV/VIDEO” to display *DATA PHASE ADJ* mode.
10. Use the “VOL” up or down to make the curve (in the cursor) smooth & symmetrical. (See Figure 42).

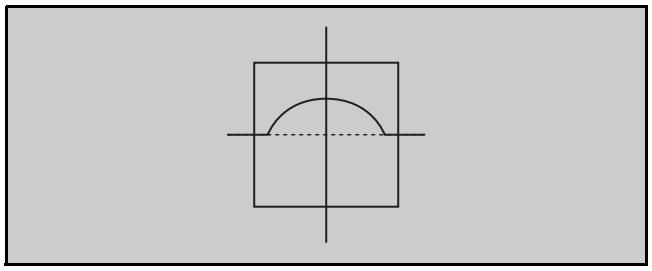


Figure 42. Symmetrical shape

11. Press “7” then “SWAP” to store data.
12. Press “0” to return to Convergence Adjustment mode.
13. After green convergence data is stored, proceed to step 23.
14. If the data was not stored, or convergence is distorted, adjust green convergence in line mode as indicated below.
15. Press “TV/VIDEO” repeatedly to select line mode as indicated in Figure 43.

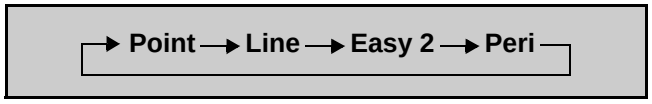


Figure 43. Convergence modes cycle

Line mode allows the displacement of each single line both horizontally and vertically. See Figure 44.

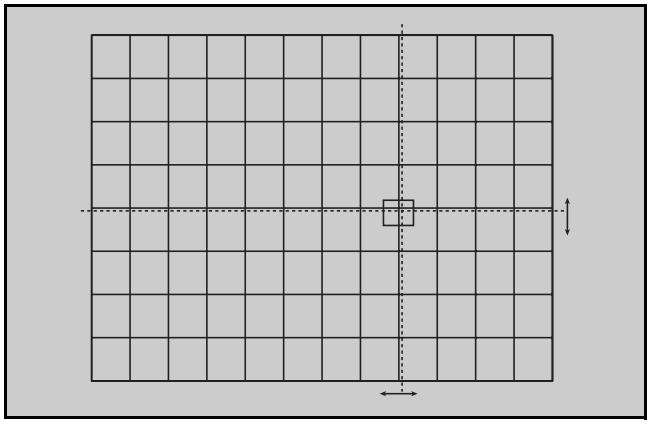


Figure 44. Line mode adjustment

16. Adjust green convergence to overlap the cross hatch. Adjust vertical & horizontal lines beginning at the center of the screen and work towards the edges of the screen.
17. Press “TV/VIDEO” repeatedly to select EASY 2 mode. EASY 2 mode allows adjustments to every other point away from the center of the screen.
18. Adjust green convergence to overlap the cross hatch at adjustment points indicated in Figure 45.

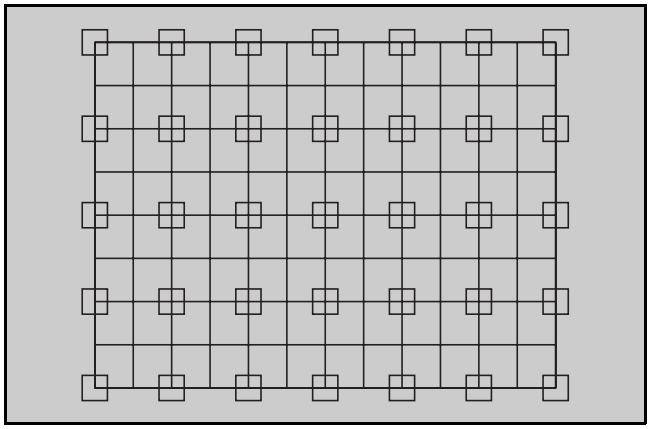


Figure 45. Easy 2 map

19. Press “TV/VIDEO” repeatedly to select Point mode. This mode covers the entire grid. Adjustments can be made at each cross point of the convergence grid.

20. Adjust green convergence to overlap the cross hatch at adjustment points indicated in Figure 46.

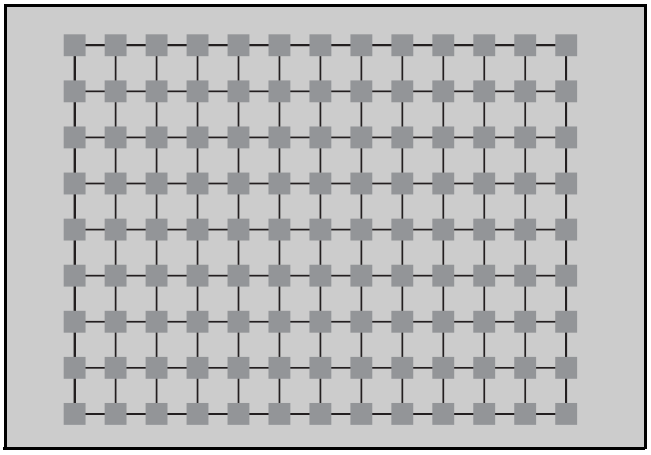


Figure 46. Point map

21. Press “7” then “SWAP” to store adjustment data.
22. Remove the Convergence Alignment Template from the PTV screen.
23. Press “3” **twice** to display **red** raster over green. Converged lines will display in yellow.
24. Press “TV/VIDEO” repeatedly to select line mode. See Figure 44.
25. Adjust red convergence to overlap the cross hatch. Adjust vertical & horizontal lines beginning at the center of the screen and work towards the edges of the screen.
26. Press “TV/VIDEO” repeatedly to select EASY 2 mode.
27. Adjust red convergence to overlap the cross hatch at adjustment points indicated in Figure 45.
28. Press “TV/VIDEO” repeatedly to select point mode.
29. Adjust red convergence to overlap the cross hatch at adjustment points indicated in Figure 46.
30. Press “7” then “SWAP” to store adjustment data.
31. Press “3” **twice** to display **blue** raster over green. Converged lines will display in light blue.
32. Press “TV/VIDEO” repeatedly to select line mode. See Figure 44.
33. Adjust blue convergence to overlap the cross hatch. Adjust vertical & horizontal lines beginning at the center of the screen and work towards the edges of the screen.
34. Press “TV/VIDEO” repeatedly to select EASY 2 mode.
35. Adjust blue convergence to overlap the cross hatch at adjustment points indicated in Figure 45.
36. Press “TV/VIDEO” repeatedly to select point mode.
37. Adjust blue convergence to overlap the cross hatch at adjustment points indicated in Figure 46.
38. Press “7” then “SWAP” to store adjustment data.
39. To exit the convergence adjustment setup, press “POWER” then “SWAP” to select the Exit option.

Horizontal and Vertical Size Check

1. Apply monoscope pattern.
2. Confirm that horizontal size is 5 ± 0.2 lines at “A” and “B” and that vertical size is 3.5 ± 0.1 lines at “C” and “D” as indicated in Figure 47..

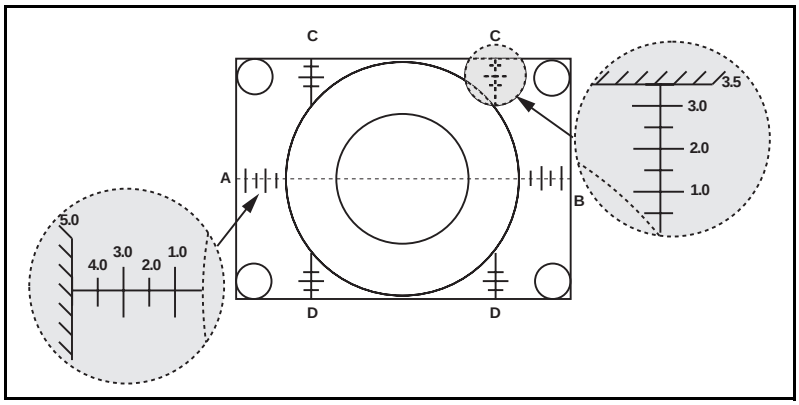


Figure 47. H & V size check

Serviceman Mode (Electronic Controls)

This PTV has electronic technology using the I²C Bus Concept. It performs as a control function and it replaces many mechanical controls. Instead of adjusting mechanical controls individually, many of the control functions are now performed by using "On Screen Display Menu". (The **Serviceman Adjustment Mode**.)

Note: *It is suggested that the technician reads all the way through and understand the following procedure for Entering/Exiting the* ***Serviceman Adjustment Mode****; then proceed with the instructions working with the PTV. When becoming familiar with the procedure, the Flow Chart for Serviceman Mode may be used as a quick guide.*

Quick Entry to Serviceman Mode:

When minor adjustments need to be done to the electronic controls, the method of Entering the serviceman Mode without removal of the cabinet back is as follows using the Remote Control:

1. Select SET-UP icon and select CABLE mode.
2. Select TIMER icon and set SLEEP time for 30 Min.
3. Press "ACTION" twice to exit menus.
4. Tune to the Channel 124.
5. Adjust VOLUME to minimum (0).
6. Press VOL◀ (decrease) **on PTV**. Red "CHK" appears in upper corner.

   Note: *After PTV is set into SERVICEMAN mode, set TIMER back to NO.*

To toggle between Aging and Serviceman modes:

While the "CHK" is displayed on the left top corner of the CRT, pressing "ACTION" and "VOL" UP on the PTV simultaneously will toggle between the modes. Red "CHK" for Serviceman and yellow

7. **Press Power** on the **Remote Control** to select one of seven Serviceman Adjustment Modes.
   1. **B**= Serviceman VCJ SUB-DATA ADJUSTMENTS.
   2. **C**= Serviceman VCJ CUT-OFF ADJUSTMENTS.
   3. **D**= Serviceman PINCUSHION ADJUSTMENTS.
   4. **P**= Serviceman PIP ADJUSTMENTS.
   5. **S** = Serviceman S OPTION ADJUSTMENTS.
   6. **W** =NON-USE
   7. **Y** = Serviceman Y OPTION ADJUSTMENTS.
   8. **V** = Serviceman V OPTION ADJUSTMENTS.
9. "**CHK**" = Normal operation of CHANNEL ▲▼ and VOLUME ◀ ▶.

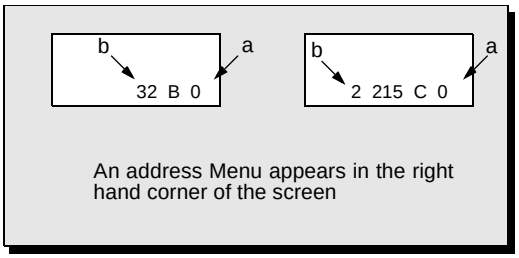


Figure 48. Serviceman Mode Menu Adjustments.

Exiting the Serviceman Mode:

Press the **Action** and **Power** on the **PTV** simultaneously for at least 2 seconds.

THE PTV EXITS SERVICEMAN MODE.

The PTV momentarily shuts off; then comes back on tuned to channel 3 with a preset level of sound.
Any programmed channels, channels caption data and some others user defined settings will be erased.

IMPORTANT NOTE:
Always Exit the Serviceman Mode Following Adjustments.

To Check Purity:

Press **Recall** on the **Remote Control** when in Serviceman Mode (red "CHK" is displayed) to enter the Purity Field Check Mode.

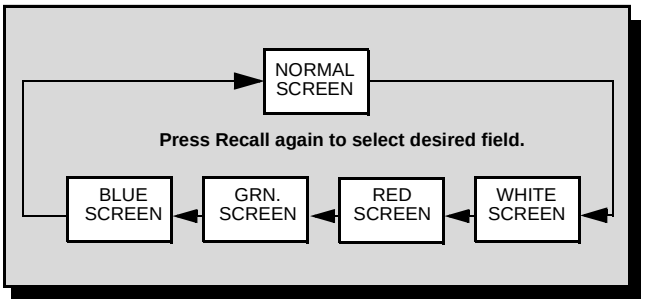


Figure 49. Purity Check Field Mode.

Serviceman Mode (Electronic Controls, Continued)

Important Note:
Write down the original values ("b" in the adjustment mode details, Figure 48) for each address adjustment before modifying values.

Follow the procedure below to access the various Serviceman adjustments. (Same procedures applies to each section.)

a. Press

CH▲▼ buttons on the Remote Control to select any of the 9 Service Sub Adjustment Addresses. ("a" in Figure 48)

b. Press

The ◀ ▶ buttons on the Remote Control to adjust the level of the selected Service Adjustments.

CF. && → AND
|| → OR

B ITEMS

ITEM	CONTENT	Default Level	MAX
00	SubContrast(Default)	41	63
01	SubBrightness(Default)	78	192
02	SubColor(Default)	32	63
03	SubTint(Default)	45	63
04	RYaxisAngle(Default)	4	07
05	BYaxisGain(Default)	6	63
06	SubContrast(YUV&&Not 525p)	35	63
07	SubBrightness(YUV&&Not 525p)	65	192
08	SubColor(YUV&&Not 525p)	49	63
09	SubTint(YUV&&Not 525p)	30	63
0a	RYaxisAngle(YUV&&Not 525p)	5	07
0b	BYaxisGain(YUV&&Not 525p)	0	63
0c	SubContrast(525p&&Not 274M)	35	63
0d	SubBrightness(525p&&Not 274M)	88	192
0e	SubColor(525p&&Not 274M)	49	63
0f	SubTint(525p&&Not 274M)	27	63
10	RYaxisAngle(525p&&Not 274M)	4	07
11	BYaxisGain(525p&&Not 274M)	7	63
12	SubContrast(525p&&274M)	54	63
13	SubBrightness(525p&&274M)	88	192
14	SubColor(525p&&274M)	49	63
15	SubTint(525p&&274M)	22	63
16	RYaxisAngle(525p&&274M)	2	07
17	BYaxisGain(525p&&274M)	20	63
18	YuvYlevel	24	31
19	YuvTint	26	63
1a	YuvColor	32	63
1b	Rfagc	127	255
1c	SubSharpness1(Default)	10	255
1d	SubSharpness2(Default)	101	255
1e	SubSharpness1(YUV)	10	255
1f	SubSharpness2(YUV)	101	255
20	PipTint	250	255
21	PipContrast	37	63
22	PipBright	78	255

Table 5: Serviceman Adj.B00~B22

Table 5: Serviceman Adj.B00~B22 (Continued)

C ITEMS

ITEM	CONTENT	Default Level	MAX
00	Rcutoff(Default)	1-169	3-255
01	Gcutoff	128	255
02	Bcutoff(Default)	1-145	3-255
03	Brightness	3	63
04	Rdrive(Default)	123	192
05	Bdrive(Default)	117	192
06	Rcutoff(YUV)	1-138	3-255
07	Bcutoff(YUV)	1-151	3-255
08	Rdrive(YUV)	128	192
09	Bdrive(YUV)	113	192
0a	BlackGCorGain(Default)	10	15
0b	WhiteGCorLevl(Default)	15	15
0c	WhiteGCorGain(Default)	15	15
0d	BloomingDc(Default)	100	255
0e	UNDEFINED	--	--
0f	BlackGCorGain(525p)	10	15
10	WhiteGCorLevl(525p)	15	15
11	WhiteGCorGain(525p)	15	15
12	BloomingDc(525p)	98	255
13	UNDEFINED	--	--

Table 6: Serviceman Adj.C00~C13

D ITEMS

ITEM	CONTENT	Default Level	MAX
00	PictureHeight	29	63
01	Vliniality	15	31
02	VScorrection	1	31
03	TrapezoidBase	26	63
04	TrapezoidOffset	0	63
05	EwdcBase	23	63
06	EwdcOffset	1	63
07	EwAmplitudeBase	15	63
08	EwAmplitudeOffset	0	63
09	HpositionBase	13	31
0a	HpositionOffset	0	31
0b	EwCornerBottom	9	15
0c	EwCornerTop	9	15
0d	ConverMute	0	01
0e	Sidepin	8	15
0f	Pararell	8	15
10	Vcompensation	15	15
11	HehtGain	1	07
12	EhtAcGain	7	07
13	DacMode	0	01
14	Afc1Gain	1	03
15	HosdPosition(Default)	39	255
16	VosdPosition(Default)	25	127
17	HosdPosition(525p&&1picture)	25	255
18	VosdPosition(525p&&1picture)	21	127
19	HosdPosition(525p&&Pip On)	43	255
1a	VosdPosition(525p&&Pip On)	17	127

Table 7: Serviceman Adj.D00~D1a

P ITEMS

ITEM	CONTENT	Default Level	MAX
00	HPipPosition(525i || NoSignal)	3	26
01	VPipPosition	16	120
02	MainHPhase(525i || NoSignal)	238	910
03	MainHPhase(Default)	106	910
04	MainVPhase(525i || NoSignal)	16	262
05	MainVPhase(Default)	27	262
06	PipPicturePosition(H)	20	910

Table 8: Serviceman Adj.P00~P08

ITEM	CONTENT	Default Level	MAX
07	PipPicturePosition(V)	13	262
08	HPipPosition(Default)	2	26

Table 8: Serviceman Adj.P00~P08 (Continued)

S ITEMS

ITEM	CONTENT	Default Level	MAX
00	MtsInputlevel	40	63
01	MtsPllvco	27	63
02	MtsFilter	27	63
03	MtsLowSepa	36	63
04	MtsHighSepa	21	63
05	LoudnessComp	7	15
06	ClockCorr	115	255
07	CapDigitalfilter	1	01
08	CapScrol	1	02
09	UNDEFINED	--	--
0a	UNDEFINED	--	--
0b	UNDEFINED	--	--
0c	UNDEFINED	--	--
0d	Fhl	6	255
0e	Fhh	30	255
0f	Upd64081_02_sw	1	01
10	Upd64081_11_sw	0	01
11	Tg2_11_sw	0	01
12	AmdpScramble_sw	0	01
13	PipBrightPlus	9	255
14	PipBrightMinus	9	255

Table 9: Serviceman Adj.S00~S14

Y ITEMS

ITEM	CONTENT	Default Level	MAX
00	YuvDelayLine2(Default)	0	01
01	YuvDelayLine1(Default)	0	01
02	YDelayLine2(Default)	0	01
03	YDelayLine1(Default)	0	01
04	VmGain(Default)	62	255
05	SepaCoreLevel(Default)	72	255
06	Cap Digital filter(Default)	154	255
07	DetailGain(Default)	128	255

Table 10: Serviceman Adj.Y00~Y30

ITEM	CONTENT	Default Level	MAX
08	Sharpness(Default)	128	255
09	DscGainSmall(Default)	58	255
0a	DscGainBig(Default)	78	255
0b	VmLimiter(Default)	152	255
0c	YuvDelayLine2(525i&&(Pip||Search))	0	01
0d	YuvDelayLine1(525i&&(Pip||Search))	0	01
0e	YDelayLine2(525i&&(Pip||Search))	0	01
0f	YDelayLine1(525i&&(Pip||Search))	0	01
10	VmGain(525i&&(Pip||Search))	70	255
11	SepaCoreLevel(525i&&(Pip||Search))	72	255
12	DetailCoring(525i&&(Pip||Search))	154	255
13	DetailGain(525i&&(Pip||Search))	112	255
14	Sharpness(525i&&(Pip||Search))	112	255
15	DscGainSmall(525i&&(Pip||Search))	69	255
16	DscGainBig(525i&&(Pip||Search))	84	255
17	VmLimiter(525i&&(Pip||Search))	152	255
18	YuvDelayLine2(525p&&1picture)	0	01
19	YuvDelayLine1(525p&&1picture)	0	01
1a	YDelayLine2(525p&&1picture)	0	01
1b	YDelayLine1(525p&&1picture)	0	01
1c	VmGain(525p&&1picture)	70	255
1d	SepaCoreLevel(525p&&1picture)	72	255
1e	DetailCoring(525p&&1picture)	154	255
1f	DetailGain(525p&&1picture)	128	255
20	Sharpness(525p&&1picture)	128	255
21	DscGainSmall(525p&&1picture)	100	255
22	DscGainBig(525p&&1picture)	112	255
23	VmLimiter(525p&&1picture)	152	255
24	OmuselHOffset	47	255
25	OmuselVOffset	5	255
26	Ypeaking(Default)	3	03
27	Yhcor(Default)	2	03
28	Ypeaking(VIDEO)	3	03
29	Yhcor(VIDEO)	3	03
2a	Upd03(Default)	161	255
2b	Upd03(C-VIDEO)	162	255
2c	Upd03(S-VIDEO)	163	255
2d	Ext44_00_bp74	0	15
2e	Dsp2600	169	255

Table 10: Serviceman Adj.Y00~Y30 (Continued)

ITEM	CONTENT	Default Level	MAX
2f	Dsp2700	128	255
30	Dsp2800(Default)	98	255
31	Dsp2800(RF)	209	255
32	Dsp2900	42	255
33	Dsp2a00 (Not (525i&&PIP))	188	255

Table 10: Serviceman Adj.Y00~Y30 (Continued)

V ITEMS

ITEM	CONTENT	Default Level	MAX
00	CONVER MODE(STATIC)	0	--
01	CONVER MODE(POINT)	0	--
02	AblInput	--	--
03	UNDEFINED	--	--
04	VmOnoff	0	01
05	AblOnoff	0	01
06	UNDEFINED	--	--

Table 11: Serviceman Adj.V00~V06

INSPECTION PREPARATION

THE CHANGE OF THE OPTIONAL DATA LIST IN SERVICEMAN MODE

1. If EEPROM (IC002) is changed, change as following.

B ITEMS

ITEM	CONTENT	OUTPUT	SLAVE	EEPROM		BEFORE (Default)(D)		AFTER (Data)(D)
1c	SubSharpness1(Default)	AMDP	42	A2 1C		37	→	10
1d	SubSharpness2(Default)	AMDP	42	A2 1D		23	→	101
1e	SubSharpness1(YUV)	AMDP	42	A2 1E		37	→	10
1f	SubSharpness2(YUV)	AMDP	42	A2 1F		23	→	101
20	PipTint	MN8412	B8	A2 20		0	→	250
21	PipContrast	MN8412	B8	A2 21		32	→	37

C ITEMS

ITEM	CONTENT	OUTPUT	SLAVE	EEPROM		BEFORE (Default)(D)		AFTER (Data)(D)
0a	BlackGCorGain(Default)	AN5393	86	A2 3C		4	→	10
0b	WhiteGCorLevl(Default)	AN5393	86	A2 3D		7	→	15
0c	WhiteGCorGain(Default)	AN5393	86	A2 3E		15	→	15
0f	BlackGCorGain(525p)	AN5393	86	A2 41		4	→	10
10	WhiteGCorLevl(525p)	AN5393	86	A2 42		7	→	15
11	WhiteGCorGain(525p)	AN5393	86	A2 43		15	→	15

D ITEMS

ITEM	CONTENT	OUTPUT	SLAVE	EEPROM		BEFORE (Default)(D)		AFTER (Data)(D)
15	HosdPosition(Default)	TG2	10	A2 65		35	→	39
17	HosdPosition(525p and picture)	TG2	10	A2 67		35	→	25
19	HosdPosition(525p and Pip On)	TG2	10	A2 69		35	→	43

Y ITEMS

ITEM	CONTENT	OUTPUT	SLAVE	EEPROM		BEFORE (Default)(D)		AFTER (Data)(D)
04	VmGain(Default)	CXA1315	44	A0 D3		70	→	62
27	Yhcor(Default)	Upd64081	BA	A0 F6		1	→	2
29	Yhcor(VIDEO)	Upd64081	BA	A0 F8		0	→	3

* The mention of eeprom slave address in remote mode (r mode) is as follows.
  Slave address of eeprom is "A0", "A2", "A4" AND "A6".

EEPROM		M MODE
A0	→	R0
A2	→	R1
A4	→	R2
A6	→	R3

EX.) "A0 CC" → ** R 0CC
"A2 00" → ** R 100

2. The way of rom_correction for improvement of 24p

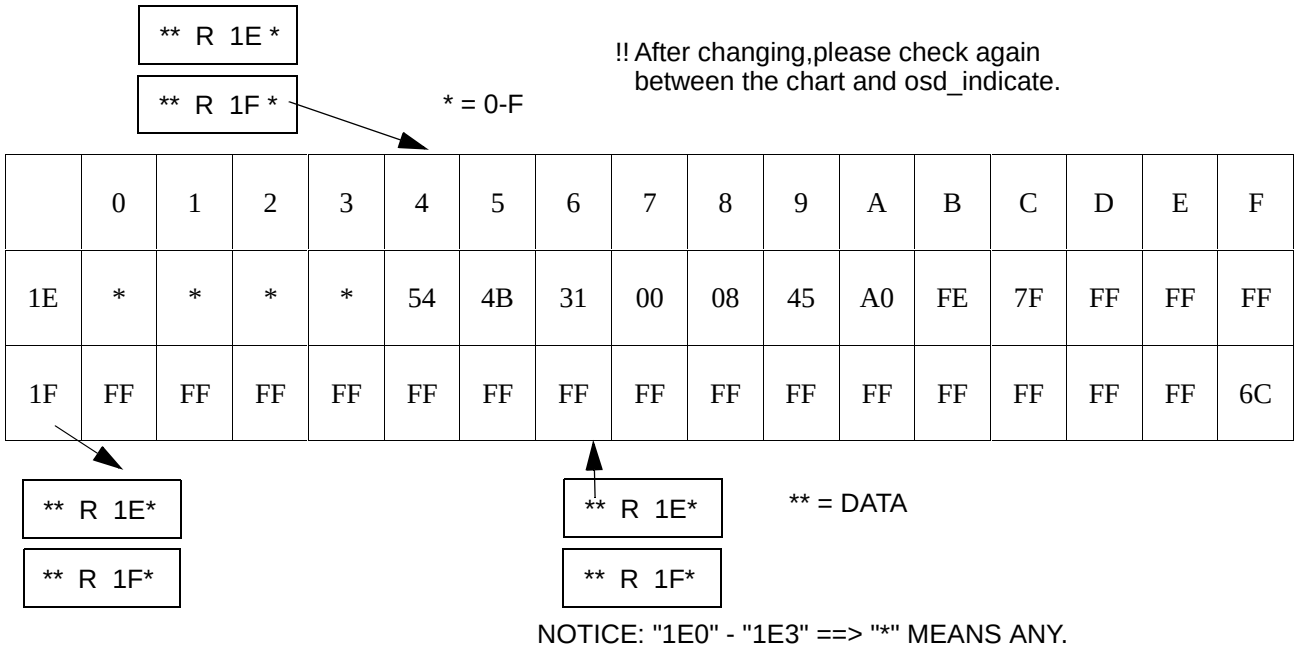
1. Confirm the red CHK mode.
2. Press "POWER" key of transmitter (Remote Control) until "S" mode.
3. Press "MUTE" key of transmitter (Remote Control) in 3 seconds.
4. Confirm "R" mode. <== The mode is changed from "S" to "R" by item 3.

   ** R 000

5. Set "1E0" (following) by channel up or down key of transmitter.

   ** R 1E0

6. Change the data from "1E0" to "1FF" as following chart by channel up/down key and volume up/down key of transmitter.



	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
1E	*	*	*	*	54	4B	31	00	08	45	A0	FE	7F	FF	FF	FF
1F	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	6C

NOTICE: "1E0" - "1E3" ==> "*" MEANS ANY.

7. Press "POWER" key of transmitter until CHK mode.
8. Press "POWER" key of front panel to turn off.
9. Plug off and leave about 5 seconds.
10. Plug in and confirm that the receiver turns on and appear a picture.

Horizontal Duty Alignment

Procedure:

1. Check the R534 (J-PWA) that is turned up to clockwise.
2. Receive NTSC indian head pattern.
3. At the following point (D-PWA), confirm the horizontal drive pulse by oscilloscope TPD3 - TPD1(GND).
4. Confirm that the width of horizontal drive pulse is within the following specification

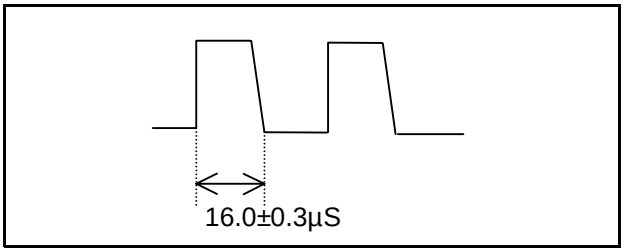


Figure 50. Horizontal Duty Adjustment

5. In case of out of specification, adjust R534 (J PWA) to get in to the specification.
6. After adjustment, paint R534 to fix.

HV_FEEDBACK Voltage Adjustment

Preparation:

1. NTSC cross hatch pattern
2. Oscilloscope TPB3 and TPB21 (GND)...B-PWA
   2V/div and 2ms/div

Note: *When HV(High Voltage) fluctuates, the horizontal size and vertical size fluctuate.*
Ex) High beam (Indian head pattern); spread
Low beam (Cross hatch pattern); shrink
The HV feedback circuit makes deflection correct the fluctuation of size.
This adjustment is the standard voltage for the HV feedback circuit.

Procedure:

1. Apply NTSC cross hatch pattern.
2. Confirm the voltage of TPB3 (B-PWA) is 10.0±0.5v.
3. In case of out of 10.0±0.5v, adjust R1526 (B-PWA). To get in to the specification.

YC Output Adjustment

Preparation:

Oscilloscope probe TP110(A-PWA) - GND

Procedure:

1. Apply color-bar.
2. Adjust B18(YUV Y-level) DAC data is 1.36±0.05vpp (see Figure 51).

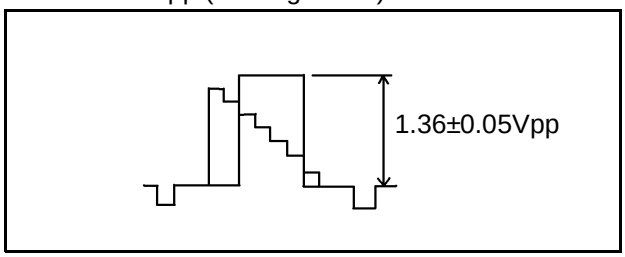


Figure 51. YC Y-level output Adjustment

3. Oscilloscope probe TP111(A-PWA)-GND.
4. Apply rainbow-bar.
5. Adjust B19(YUV tint) DAC data is min. At third-bar (see Figure 52).

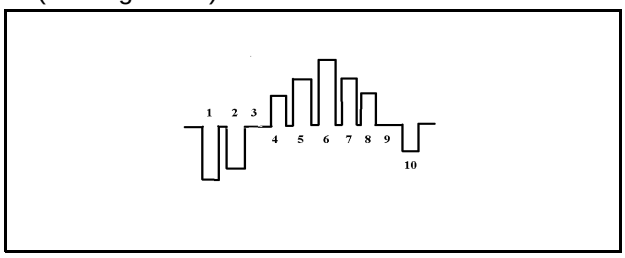


Figure 52. YC YUV tint Output Adjustment

6. Apply color-bar.
7. Adjust B1a(YUV color) DAC data is 1.00±0.03vpp (see Figure 53).

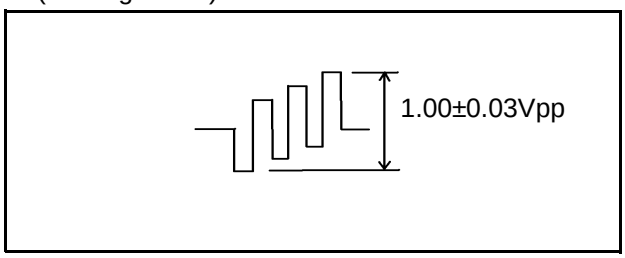


Figure 53. YC YUV color Output Adjustment

8. Oscilloscope probe TP112(A-PWA)-gnd.
9. Apply color-bar.
10. Confirm the PR-level is 1.00±0.1vpp (see Figure 54).

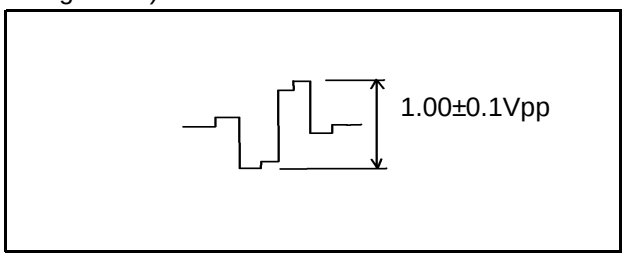


Figure 54. YC PR-level Output Adjustment

Sub Contrast Adjustment (NTSC composite)

Preparation:

1. Oscilloscope (more than 5MHZ)
2. Color control(USER DAC) MIN.(0)
3. Picture control(USER DAC) MAX.(63)
4. Bright control(USER DAC) CENTER (31)
5. Sharpness control(USER DAC) MIN (0)
6. Oscilloscope probe TPX4, TPX5, TPX6- GND

Procedure:

1. Apply a PTV pattern(#7).
2. Adjust B01 data (sub bright) to obtain 1.9±0.05V at TPX5. (see Figure 55)
3. Adjust B00 data (sub contrast) to obtain 3.8±0.05V at TPX5 (see Figure 55)
4. Adjust C0D data (blooming DC) to obtain 3.8±0.05V at TPX5 (see Figure 55)
5. Adjust C0 data (R-cut off) to obtain 1.9±0.05V at TPX4 (see Figure 55)
6. Adjust C2 data (B-cut off) to obtain 1.9±0.05V at TPX6 (see Figure 55)

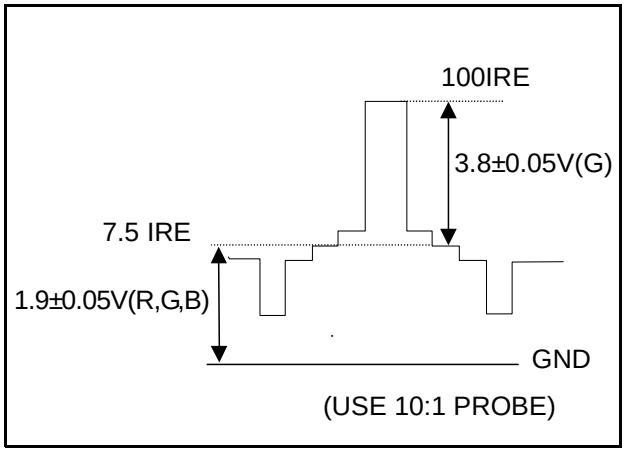


Figure 55. NTSC Composite Adjustment

Sub Contrast Adjustment (480P component)

Procedure:

1. Apply a new PTV pattern.
2. Adjust B0d data (Sub Bright for 480P & 170M) to obtain 1.9±0.05V at TPX5 (see the Figure 56).
3. Adjust B0c data (Sub Contrast for 480P & 170M) to obtain 4.0±0.05V at TPX5 (See Figure 56).
4. Adjust C12 Data (Blooming DC for 480P) to obtain 4.0±0.05V at TPX5 (see Figure 56).
5. Adjust C6 data (YUV R-cut off) to obtain 1.9±0.05V at TPX4 (see Figure 56).
6. Adjust C7 data (YUV B-cut off) to obtain 1.9±0.05V at TPX6 (see Figure 56).

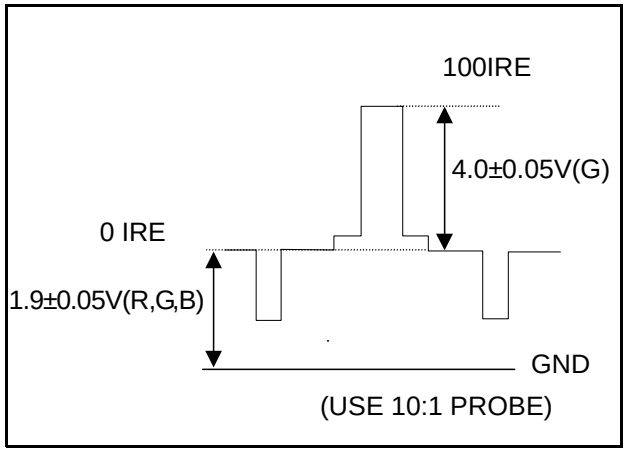


Figure 56. 480P Composite Adjustment

Sub Contrast Adjustment (480I component)

Procedure:

1. Adjust B0c (Sub Contrast 480P 170M) DAC data copy to B06(Sub Contrast 480I), B12(Sub Contrast 480P 274M).
2. Adjust B0d (Sub Brightness 480P 170M) DAC data copy to B07(Sub Brightness 480I), B13(Sub Brightness 480P 274M).

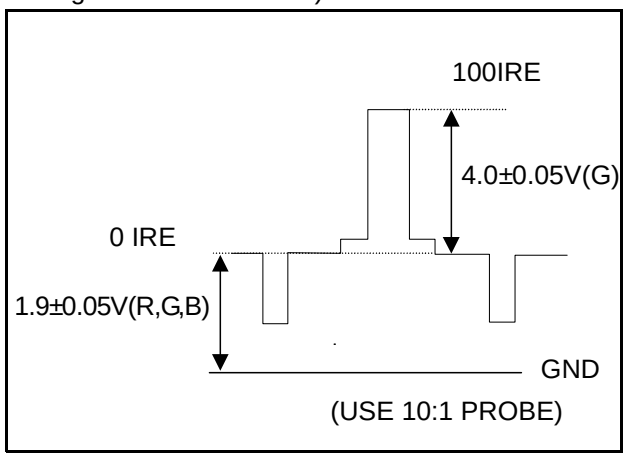


Figure 57. 480I & 480P 274M Component Adjustment

Serviceman Mode (Electronic Controls, Continued)

Red, Green & Blue Screen Cutoff

1. Use either a no input signal condition or raster from the NTSC generator.
2. Observing the green tube directly or via a reflective surface, adjust the VR on the green tube for minimum noise.
3. Adjust the noise level in the red and blue tubes to match the noise level in the green tube.

White Balance Adjustment (NTSC composite)

This adjustment requires that the serviceman use skills in observing what a screen without color should look like.

1. Enter the serviceman mode.
2. Apply a monoscope pattern to one of the video inputs.

High Light White Balance Adjustment

1. Adjust DAC C4 for red and C5 for blue adjustments.
2. Make sure the screen is not blue or red. The screen should be white in all areas.
3. Check the monoscope pattern for a black and white picture with even shades of gray and no color tint in the picture.

Low Light White Balance Adjustment

1. Adjust DAC C0 for red and DAC C2 for blue.
2. Check the screen for even white in all areas, no color.
3. Check the monoscope pattern for a black and white picture, even shades of gray and no color tint in the low light areas.
4. Repeat the High Light and Low Light White Balance again until the white balance tracks from high light to low light.

Tint and Color Check

Again, the serviceman ability to see color and the balance of color is important for theses adjustments.

Tint Check

1. In Picture Menu set Picture Norm to YES.
2. Apply color bars to the video input.
3. Magenta is composed of two colors, blue and red.
4. Check to see that magenta does not have too much blue or too much red.
5. Check cyan. Cyan is composed of blue and green. It should not have too much blue or green.
6. Use a test signal from a VCR or laser disk that has a pre-recorded close up of a signal that has good flesh tones.
7. The signal on the VCR or laser disk should look normal.

Color Check

Using a clean RF or video signal, set the color level so that it does not saturate or appear harsh. Make sure that color is not set so that it appears dull and washed out. Look for natural colors, try to adjust the picture to appear as a normal photograph.

White Balance Adjustment (480I, 480P, composite)

This adjustment requires that the serviceman use skills in observing what a screen without color should look like.

1. Enter the serviceman mode.
2. Apply a monoscope pattern 480I or 480P to one of the component inputs.

High Light White Balance Adjustment

1. Adjust DAC C8 for red and C9 for blue adjustments.
2. Make sure the screen is not blue or red. The screen should be white in all areas.
3. Check the monoscope pattern for a black and white picture with even shades of gray and no color tint in the picture.

Low Light White Balance Adjustment

1. Adjust DAC C6 for red and DAC C7 for blue.
2. Check the screen for even white in all areas, no color.
3. Check the monoscope pattern for a black and white picture, even shades of gray and no color tint in the low light areas.
4. Repeat the High Light and Low Light White Balance again until the white balance tracks from high light to low light.

Tint and Color Check

Again, the serviceman ability to see color and the balance of color is important for theses adjustments.

Tint Check

1. In Picture Menu set Picture Norm to YES.
2. Apply color bars 480I or 480P to the component input.
3. Magenta is composed of two colors, blue and red.
4. Check to see that magenta does not have too much blue or too much red.
5. Check cyan. Cyan is composed of blue and green. It should not have too much blue or green.
6. Use a test signal from a VCR or DVD disk that has a pre-recorded close up of a signal that has good flesh tones.
7. The signal on the VCR or DVD disk should look normal.

Color Check

Using a clean component signal, set the color level so that it does not saturate or appear harsh. Make sure that color is not set so that it appears dull and washed out. Look for natural colors, try to adjust the picture to appear as a normal photograph.

MTS Circuit Adjustments

Note: *It is important to adjust the MTS circuit in the order shown below.*

The MTS Circuit Adjustments require four steps:
1. Stereo VCO Adjustment.
2. Filter Adjustment.
3. Input Level Adjustment.
4. Stereo Separation Adjustment.

Stereo VCO Adjustment (S01)

Preparation:

1. Apply the following signal from the signal generator:
   Field strength: 70 ± 5dB, 75Ω OPEN, P/S 10dB.
2. Connect a frequency counter between TP039 (or A21-8) and GND.

Note: *15 seconds aging is required prior to performing the following procedure.*

Procedure:

Adjust VCO adjustment (S01) data (in the Serviceman Adjustment Menu) until the frequency counter measures 15.734kHz ± 50Hz.

Filter Adjustment (S02)

Preparation:

1. Connect a signal generator (sine wave) to antenna.
2. Connect a scope between TP038 (or A21-7) and GND.

Procedure:

1. Apply the following signal from the signal generator:
   Field strength: 70 ± 5dB, 75Ω OPEN, P/S 10dB
   Video: 100 IRE flat field, 30% modulation.
   Audio: 15.734kHz sine wave, 16.7kHz deviation.
2. Adjust MTS filter (S02) data (in the Serviceman Adjustment Menu) until the amplitude of the measured waveform on the oscilloscope is minimum.

Input Level Adjustment (S0)

Preparation:

1. Connect an RMS meter (A.C. Range) with filter jig as shown in Figure 58.

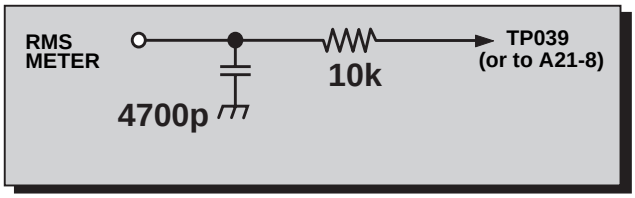


Figure 58. Filter Jig

2. Connect an RF signal generator to the RF antenna input.

Procedure:

1. Apply the following signal from the RF signal generator:
   Video: 100 IRE flat field, 30% modulation.
   Audio: 300Hz, 100% modulation, monaural (70 ± 5dB, 75Ω OPEN, P/S 10dB). Make sure to turn off 75µs pre-emphasis.
2. Adjust (S0) *MTS-INPUT* data in the Serviceman Adjustment Menu) until the voltage measured is 210mV ± 5.0mV rms.

Stereo Separation Adjustment (S03 & S04)

Preparation:

1. Connect an RF signal generator to the RF antenna input.
2. Connect an oscilloscope probe between TP039 (or (A21-8) and GND.

Procedure:

1. Set PTV to Stereo Mode (in the Audio Menu).
2. Apply the following signal from the RF signal generator:
   Video: 100 IRE flat field, 30% modulation.
   Audio: 300Hz, 30% modulation, stereo (left only) (70dB ± 5dB, 75Ω OPEN, P/S 10dB).

Note: *Set the 30% modulation with the pilot light and N.R. switches OFF then turn them ON while testing.*

3. Adjust MTS Low-Level Separation (S03) data (in the Serviceman Adjustment Menu) until the amplitude of the measured waveform on the scope is minimum.
4. Apply the following signal from the RF signal generator:
   Video: 100 IRE flat field, 30% modulation.
   Audio: 3KHz, 30% modulation, stereo (left only).
   (70dB ± 5dB, 75Ω OPEN, P/S 10dB).

   Note: *Set the 30% modulation with the P.L and N.R. switches OFF then turn them ON while testing.*
5. Adjust MTS High-Level Separation (S04) data (in the Serviceman Adjustment Menu) until the amplitude of the waveform measured on the scope is minimum.
6. Repeat above steps 2 through 4 until the amplitude is at minimum for both signals.

Clock Adjustment (S06)

Preparation:

Connect the frequency counter from TPS1 (MPU Pin 34) to cold ground (⏚).

Note: *Frequency Counter probe capacitance should be 8pF or less.*

Procedure:

1. Turn the PTV "OFF" with the AC power applied.
2. Measure TPS1 (MPU pin 34) for the frequency of the waveform and record the reading.

   Note: *Pin 34 measurement must have at least four digits of resolution following the decimal point. Example: 000.0000*
3. Turn the PTV back "ON".
4. Place the PTV into Serviceman Mode for making electronic adjustment, select the Clock Adjustment DAC (S06).
5. Calculate and set S06 based on the following formula:

$$S06 = 128 + 1.35x10^{6}x\frac{\{187.5000 - pin(34)[\mathrm{Hz}]\}}{187.5000}$$

Note: *Pin 34 measurement will not change regardless of the value stored in S12.*

Serviceman Mode (Mechanical Controls)

2nd Tuner - VCO Adjustment

Note: *Allow 20 seconds of aging prior to making the flowing adjustments.*

Preparation:

1. Apply color bars pattern to the video input.
2. Connect an oscilloscope to TP050 (or to A16-5 on the A-Board). Use cold ground for scope connection. Set the scope at Horizontal Sweep rate (20μs) time base.
3. Connect a DVM to the positive (+) terminal of C2126 (on A-Board).
4. Connect a jumper between TPA3 and GND (on the A-Board).

Procedure:

1. Adjust L2109 to measure 2.4V ± 0.1V on the DVM.
2. Confirm that the peak-sync of PIP signal is 1.0 ± 0.05V_{P-P}. See Figure 59.

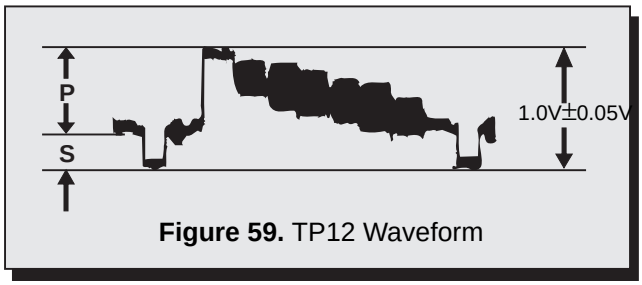


Figure 59. TP12 Waveform

3. Check that the sync signal amplitude (ratio between the sync signal to detection output) is within the range of 30 ± 5% (S/(S+P) = 30 ± 5%).

2nd Tuner - RF-AGC Adjustment

Preparation:

1. Connect a DVM to 2nd tuner AGC terminal (TNR2101) or C2115(+) (A-Board).
2. Apply color bar with 63 ± 2dB (75Ω open).

Procedure:

1. Rotate R2118 fully clockwise and confirm that noise disappears. Record the reference voltage.
2. Rotate R2118 fully counter-clockwise and confirm that noise appears.
3. Slowly turn R2118 clockwise until the reference voltage is obtained.
4. Confirm RF-AGC voltage (the reference voltage) is lower when the incoming field signal strength is increased by 3dB.

Table of the service adjustment item which can or can not be adjusted in each Mode

Signal Formated			NTSC	Component			
				480I	480P others of	480P Only 274M	480P PIP
Item		Sub Item					
B	00	SubContrast(Default)	X				
	01	SubBrightness(Default)	X				
	02	SubColor(Default)	X				
	03	SubTint(Default)	X				
	04	RYaxisAngle(Default)	X				
	05	BYaxisGain(Default)	X				
	06	SubContrast(YUV&&Not 525p)		X			
	07	SubBrightness(YUV&&Not 525p)		X			
	08	SubColor(YUV&&Not 525p)		X			
	09	SubTint(YUV&&Not 525p)		X			
	0a	RYaxisAngle(YUV&&Not 525p)		X			
	0b	BYaxisGain(YUV&&Not 525p)		X			
	0c	SubContrast(525p&&Not274M)			X		
	0d	SubBrightness(525p&&Not274M)			X		
	0e	SubColor(525p&&Not274M)			X		
	0f	SubTint(525p&&Not274M)			X		
	10	RYaxisAngle(525p&&Not274M)			X		
	11	BYaxisGain(525p&&Not274M)			X		
	12	SubContrast(525p&&274M)				X	
	13	SubBrightness(525p&&274M)				X	
	14	SubColor(525p&&274M)				X	
	15	SubTint(525p&&274M)				X	
	16	-	NonUse				
	17	BYaxisGain(525p&&274M)				X	
	18	YuvYlevel	X				
	19	YuvTint	X				
	1a	YuvColor	X				
	1b	Rfagc	X				
	1c	SubSharpness1(Default)	X				
	1d	SubSharpness2(Default)	X				
	1e	SubSharpness1(YUV)	X				
	1f	SubSharpness2(YUV)	X				
	20	PipTint	X				
	21	PipContrast	X				
	22	-	Fixed				
C	00	Rcutoff(Default)	X				
	01	-	Fixed				
	02	Bcutoff(Default)	X				
	03	Brightness	X				
	04	Rdrive(Default)	X				
	05	Bdrive(Default)	X				
	06	Rcutoff(YUV)			X		
	07	Bcutoff(YUV)			X		
	08	Rdrive(YUV)			X		
	09	Bdrive(YUV)			X		
	0a	BlackGCorGain(Default)	X				
	0b	WhiteGCorLevl(Default)	X				
	0c	WhiteGCorGain(Default)	X				
	0d	BloomingDc(Default)	X				
	0e	-	NonUse				
	0f	BlackGCorGain(525p)			X		

Signal Formated			NTSC	Component			
				480I	480P others of	480P Only 274M	480P PIP
Item		Sub Item					
	10	WhiteGCorLevl(525p)			X		
	11	WhiteGCorGain(525p)			X		
	12	BloomingDc(525p)			X		
	13	-	NonUse				
D	00	PictureHeight					
	01	Vliniality	X				
	02	-	NonUse				
	03	TrapezoidBase	X				
	04	-	Fixed				
	05	EwdcBase	X				
	06	-	Fixed				
	07	EwAmplitudeBase	X				
	08	-	Fixed				
	09	HpositionBase	X				
	0a-1a	-	Fixed				
P	00-08	-	Fixed				
S	00	MtsInputlevel	X				
	01	MtsPllvco	X				
	02	MtsFilter	X				
	03	MtsLowSepa	X				
	04	MtsHighSepa	X				
	05	LoudnessComp	X				
	06	ClockCorr	X				
	07-14	-	Fixed				
Y	00-33	-	Fixed				
V	00-06	-	Fixed				

Display Contents

Indication item	Symptom, Status	Treatment method	Applicable Board, applicable
MEMORY	Always power on CH3	Exchange IC002	A-Board
TNR1	Main RF Channel can not change	Exchange TNR001	A-Board
TNR2	Sub RF Channel can not change	Exchange TNR2101	A-Board
SOUND	No sound or Sound can not be operated	Exchange IC2401	J-Board
MTS	No sound	Board Exchange	N-Board
AVSW	NTSC/Video input can not select	Exchange IC3001	J-Board
CONVER	Convergence adjust can not be operated	Board exchange	DC-Board
DEF	Size and deflection of picture not normal	Exchange IC441	A-Board
CHROMA	No color or No picture of Main NTSC video	Board exchange	YC-Board
YC-M	No color or No picture of Main NTSC video		
YC-S	No color or No picture of Sub NTSC video	Board exchange	DP-Board
BU6401	No Problem		
AMDP	No Picture		
CIP	No Picture		
D_DP	No Picture and/or synchronization not stationary		
D_X1	Sharpness is not possible	Exchange IC2701	X-Board
D_X2	The servicing item ” C0d or C12 ” does not operate	Exchange IC2702	X-Board
TA8859	Size and deflection of picture not normal	Exchange IC471	A-Board
RGBP	No Picture	Exchange IC2601	X-Board
TG	No Picture and/or synchronization not stationary	Exchange IC8618	X-Board

Table 12: Display Contents

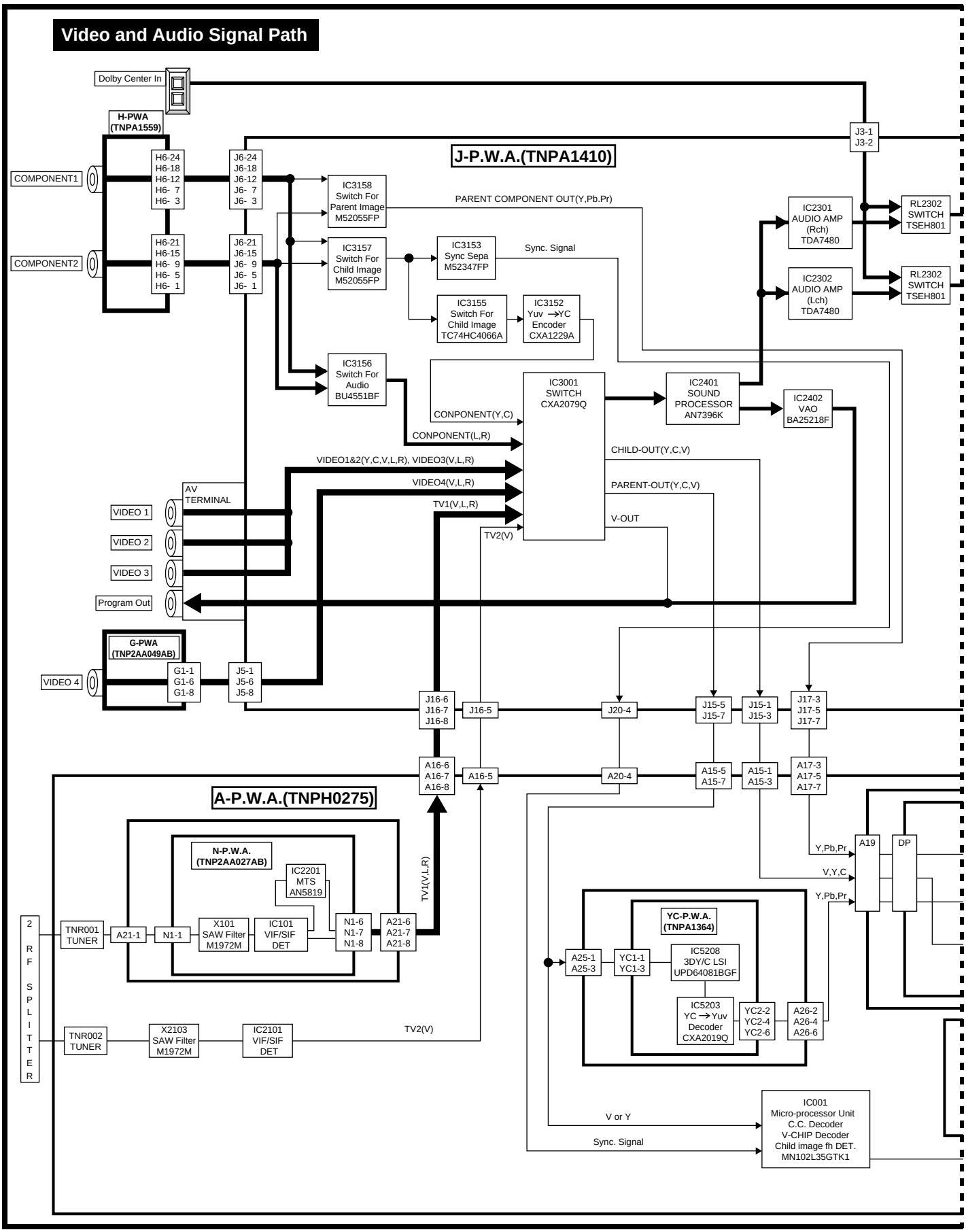
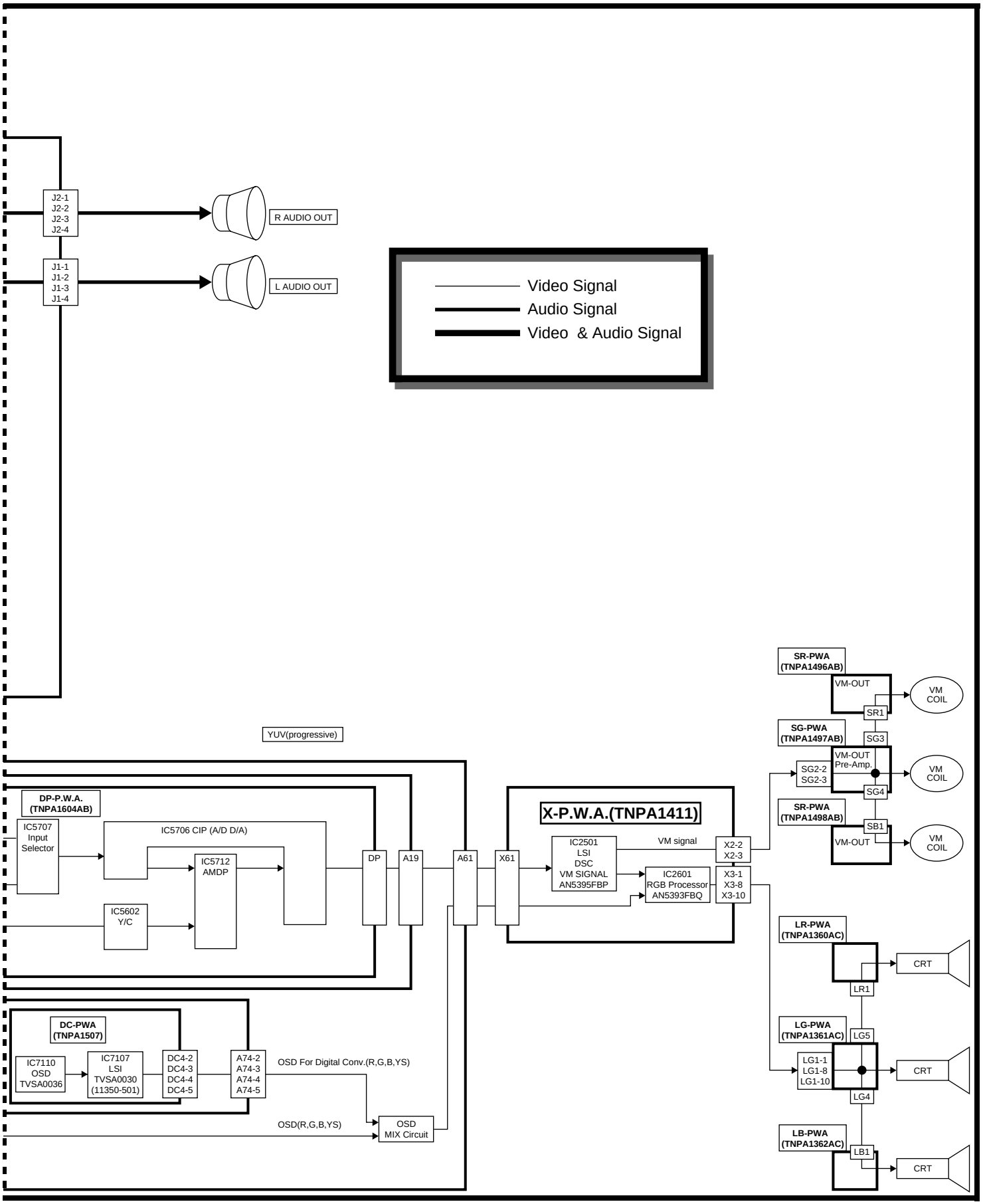


Figure 60. Video and Audio Signal Path


Right Portion
J2-1
J2-2
J2-3
J2-4
R AUDIO OUT
J1-1
J1-2
J1-3
J1-4
L AUDIO OUT
Video Signal
Audio Signal
Video & Audio Signal
YUV(progressive)
DP-P.W.A.
(TNPA1604AB)
IC5707
Input
Selector
IC5706 CIP (A/D D/A)
IC5712
AMDP
IC5602
Y/C
DP
A19
A61
X61
X-P.W.A.(TNPA1411)
IC2501
LSI
DSC
VM SIGNAL
AN5395FBP
VM signal
IC2601
RGB Processor
AN5393FBQ
X2-2
X2-3
X3-1
X3-8
X3-10
SR-PWA
(TNPA1496AB)
VM-OUT
SR1
VM
COIL
SG-PWA
(TNPA1497AB)
SG3
VM-OUT
Pre-Amp.
SG2-2
SG2-3
SG4
SR-PWA
(TNPA1498AB)
SB1
VM-OUT
LR-PWA
(TNPA1360AC)
CRT
LR1
LG-PWA
(TNPA1361AC)
LG5
LG1-1
LG1-8
LG1-10
LG4
LB-PWA
(TNPA1362AC)
LB1
DC-PWA
(TNPA1507)
IC7110
OSD
TVSA0036
IC7107
LSI
TVSA0030
(11350-501)
DC4-2
DC4-3
DC4-4
DC4-5
A74-2
A74-3
A74-4
A74-5
OSD For Digital Conv.(R,G,B,YS)
OSD(R,G,B,YS)
OSD
MIX Circuit

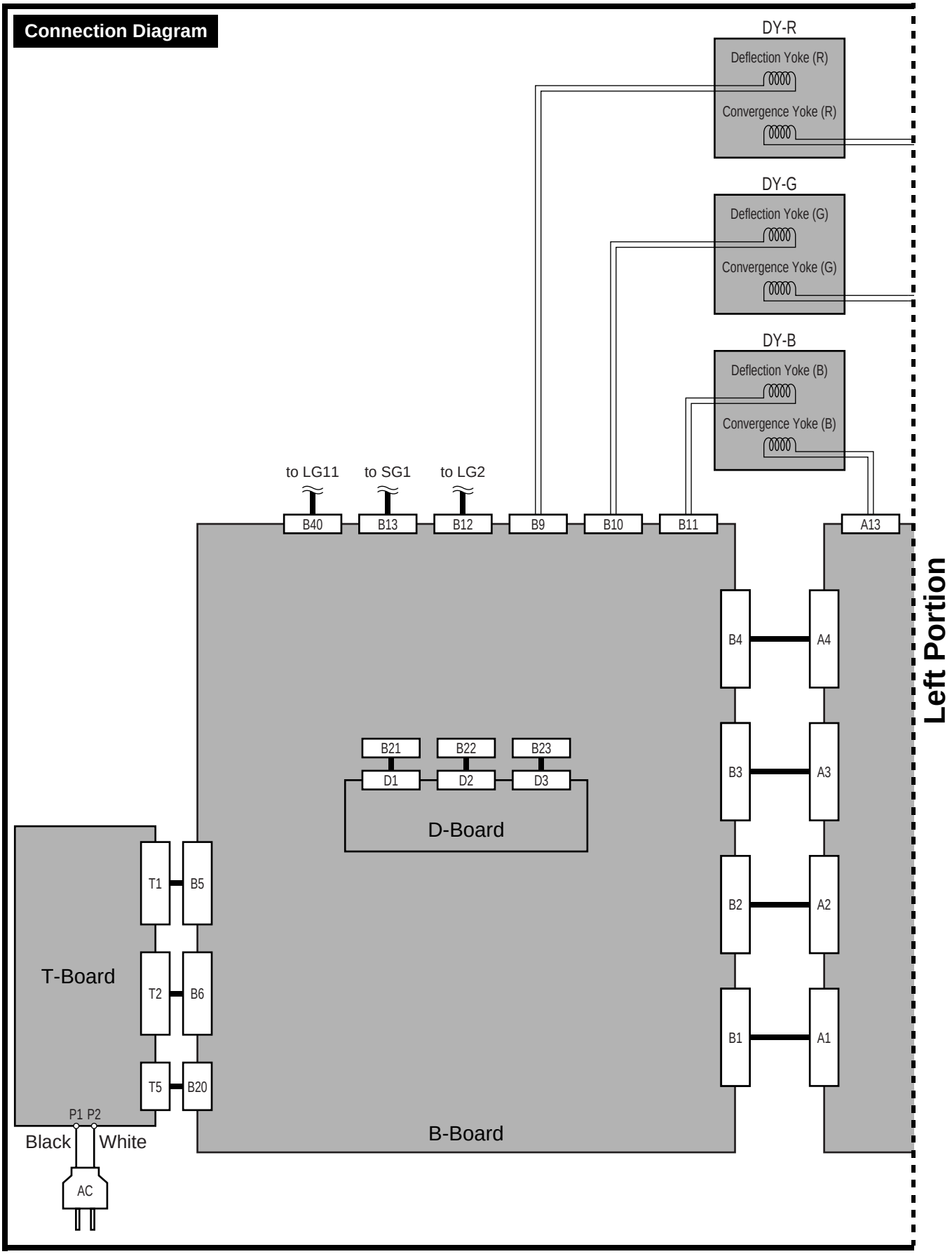
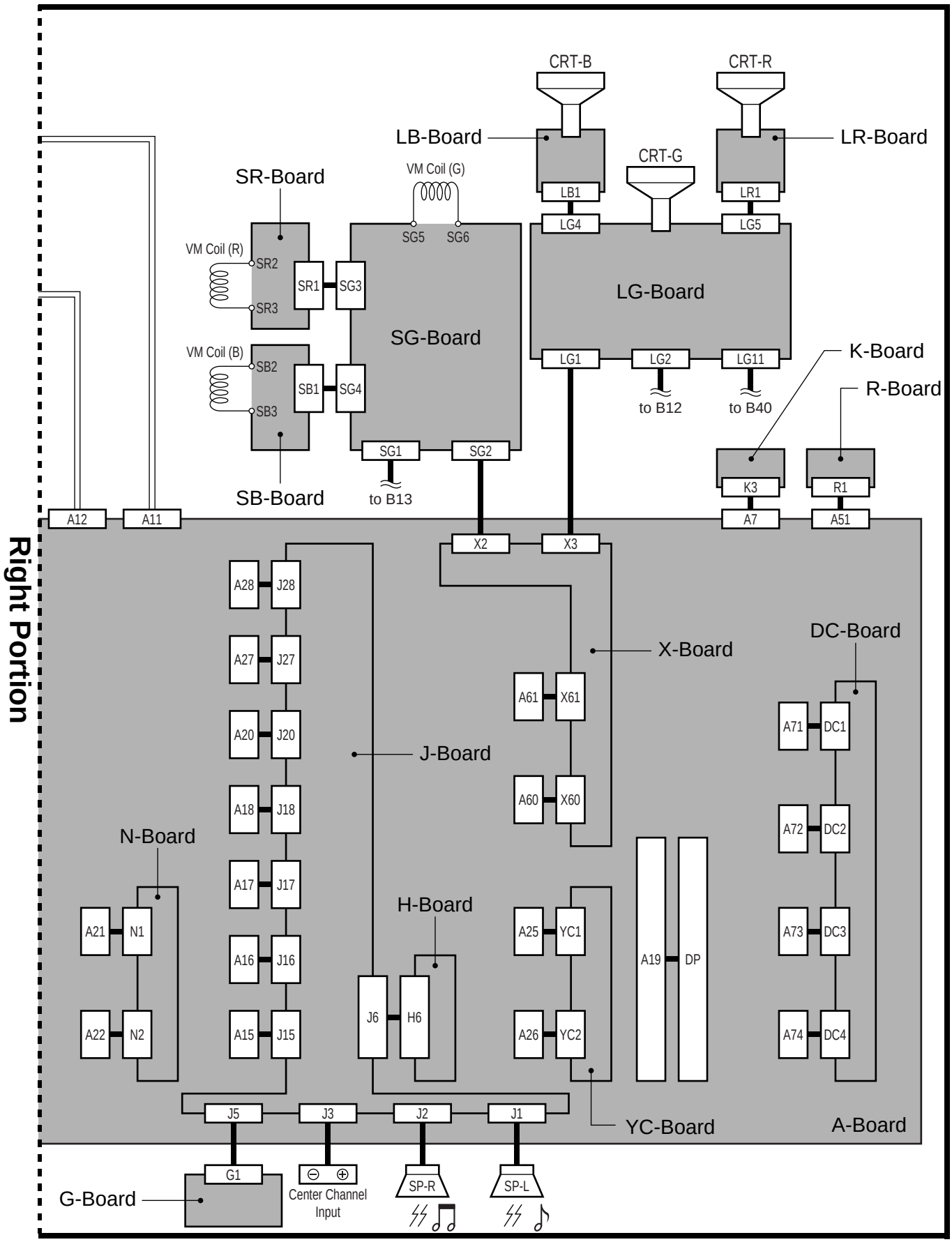


Figure 61. Connection Diagram


Right Portion
CRT-B
CRT-R
LB-Board
LR-Board
CRT-G
SR-Board
VM Coil (G)
LB1
LR1
LG4
LG5
SG5
SG6
VM Coil (R)
SR2
SR1
SG3
SR3
LG-Board
SG-Board
VM Coil (B)
SB2
SB1
SG4
SB3
LG1
LG2
LG11
K-Board
R-Board
to B12
to B40
SG1
SG2
to B13
K3
R1
A12
A11
SB-Board
A7
A51
X2
X3
A28
J28
A27
J27
X-Board
DC-Board
A61
X61
A71
DC1
A20
J20
J-Board
A60
X60
A18
J18
A72
DC2
N-Board
A17
J17
H-Board
A21
N1
A25
YC1
A19
DP
A73
DC3
A16
J16
J6
H6
A22
N2
A15
J15
A26
YC2
A74
DC4
J5
J3
J2
J1
YC-Board
A-Board
G1
SP-R
SP-L
G-Board
Center Channel
Input

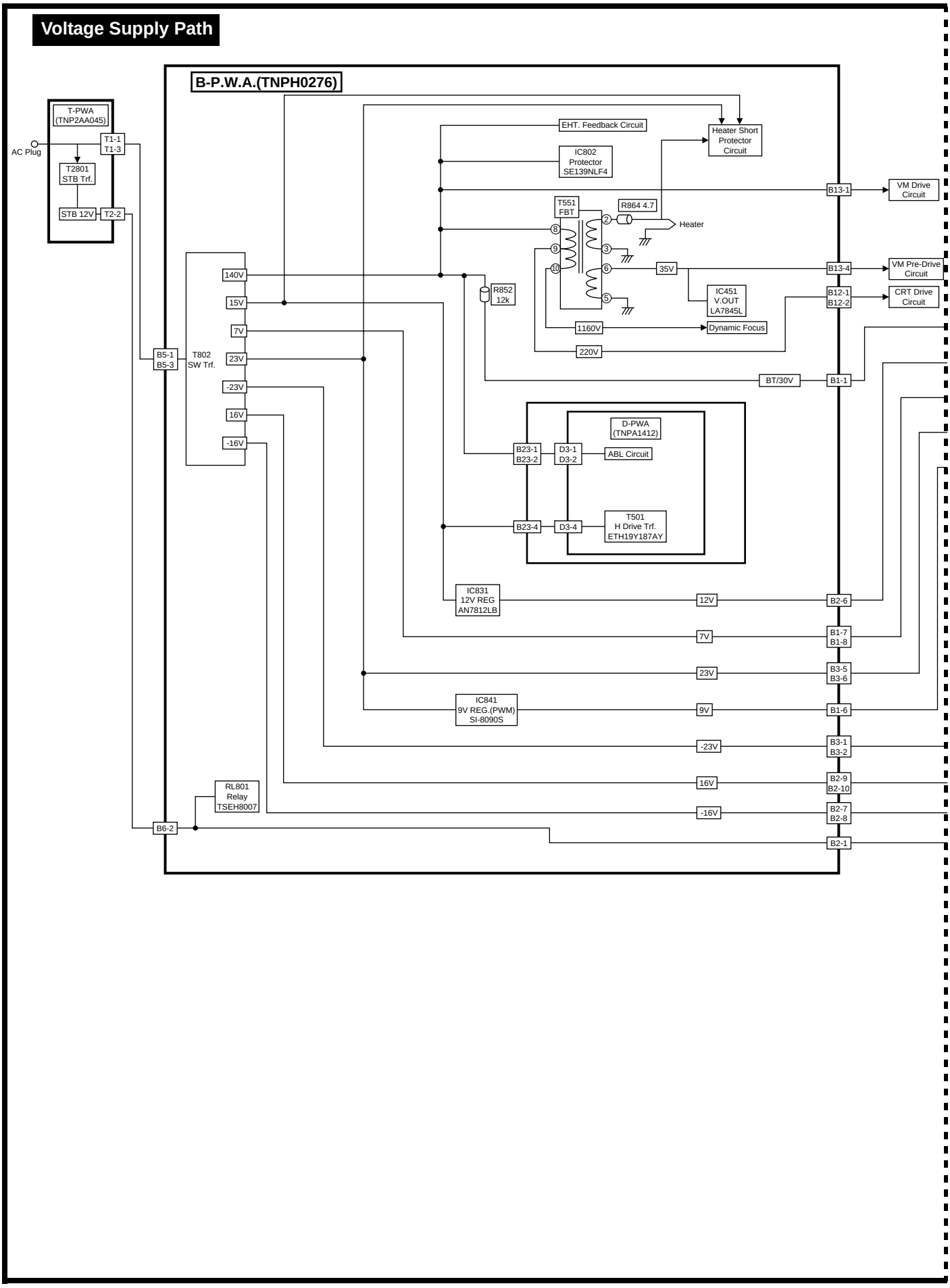
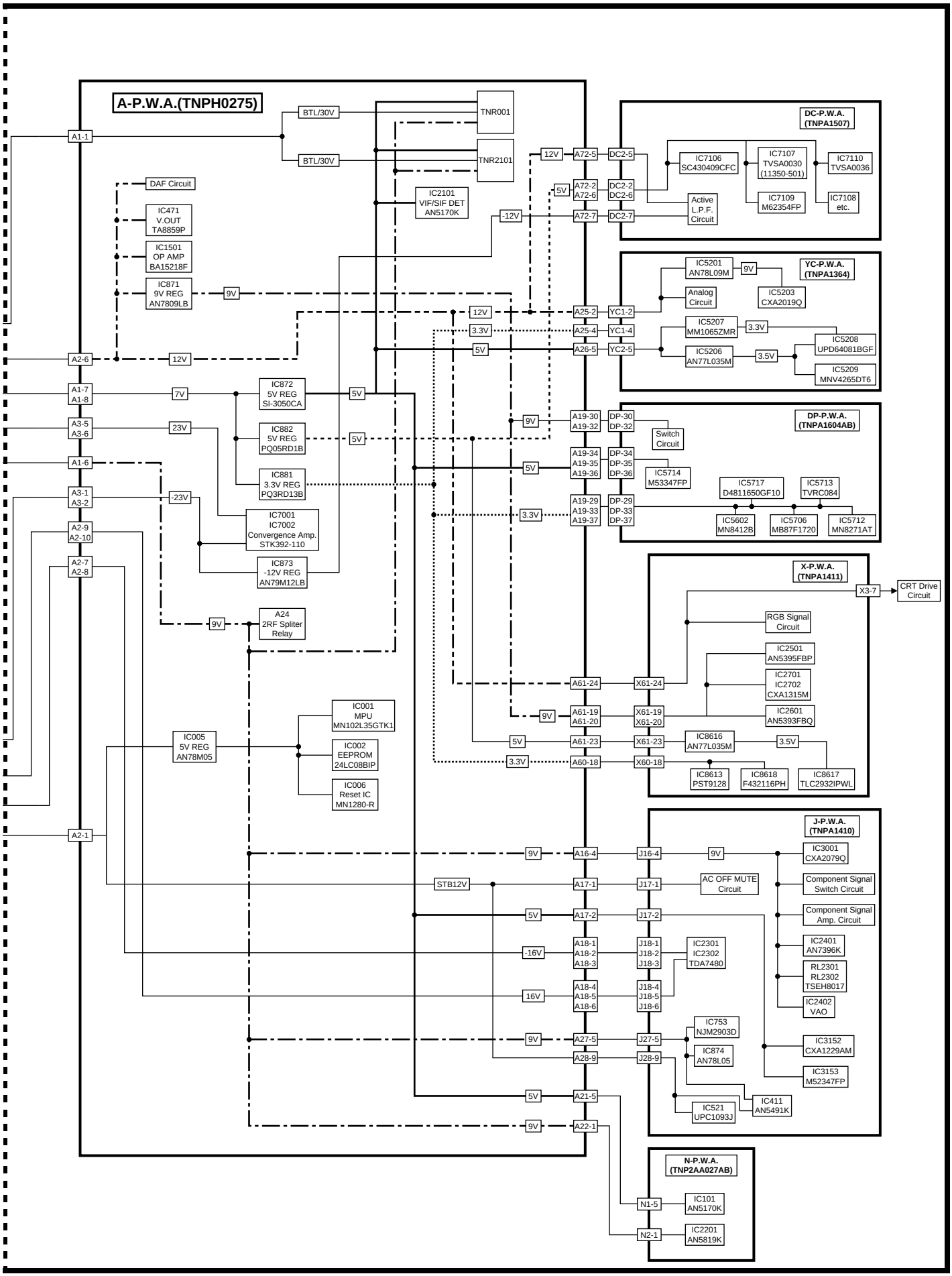


Figure 62. Voltage Supply Path


A-P.W.A.(TNPH0275)
Right Portion
BTL/30V
BTL/30V
TNR001
TNR2101
IC2101
VIF/SIF DET
AN5170K
DAF Circuit
IC471
V.OUT
TA8859P
IC1501
OP AMP
BA15218F
IC871
9V REG
AN7809LB
IC872
5V REG
SI-3050CA
IC882
5V REG
PQ05RD1B
IC881
3.3V REG
PQ3RD13B
IC7001
IC7002
Convergence Amp.
STK392-110
IC873
-12V REG
AN79M12LB
A24
2RF Spliter
Relay
IC001
MPU
MN102L35GTK1
IC002
EEPROM
24LC08BIP
IC006
Reset IC
MN1280-R
IC005
5V REG
AN78M05
DC-P.W.A.
(TNPA1507)
IC7106
SC430409CFC
IC7107
TVSA0030
(11350-501)
IC7110
TVSA0036
IC7109
M62354FP
IC7108
etc.
Active
L.P.F.
Circuit
YC-P.W.A.
(TNPA1364)
IC5201
AN78L09M
IC5203
CXA2019Q
Analog
Circuit
IC5207
MM1065ZMR
IC5208
UPD64081BGF
IC5206
AN77L035M
IC5209
MNV4265DT6
DP-P.W.A.
(TNPA1604AB)
Switch
Circuit
IC5714
M53347FP
IC5717
D4811650GF10
IC5713
TVRC084
IC5602
MN8412B
IC5706
MB87F1720
IC5712
MN8271AT
X-P.W.A.
(TNPA1411)
CRT Drive
Circuit
RGB Signal
Circuit
IC2501
AN5395FBP
IC2701
IC2702
CXA1315M
IC2601
AN5393FBQ
IC8616
AN77L035M
IC8613
PST9128
IC8618
F432116PH
IC8617
TLC2932IPWL
J-P.W.A.
(TNPA1410)
IC3001
CXA2079Q
AC OFF MUTE
Circuit
Component Signal
Switch Circuit
Component Signal
Amp. Circuit
IC2301
IC2302
TDA7480
IC2401
AN7396K
RL2301
RL2302
TSEH8017
IC2402
VAO
IC753
NJM2903D
IC874
AN78L05
IC3152
CXA1229AM
IC3153
M52347FP
IC521
UPC1093J
IC411
AN5491K
N-P.W.A.
(TNP2AA027AB)
IC101
AN5170K
IC2201
AN5819K
12V
5V
-12V
9V
3.3V
7V
23V
-23V
-16V
16V
STB12V
3.5V

IIC Connection

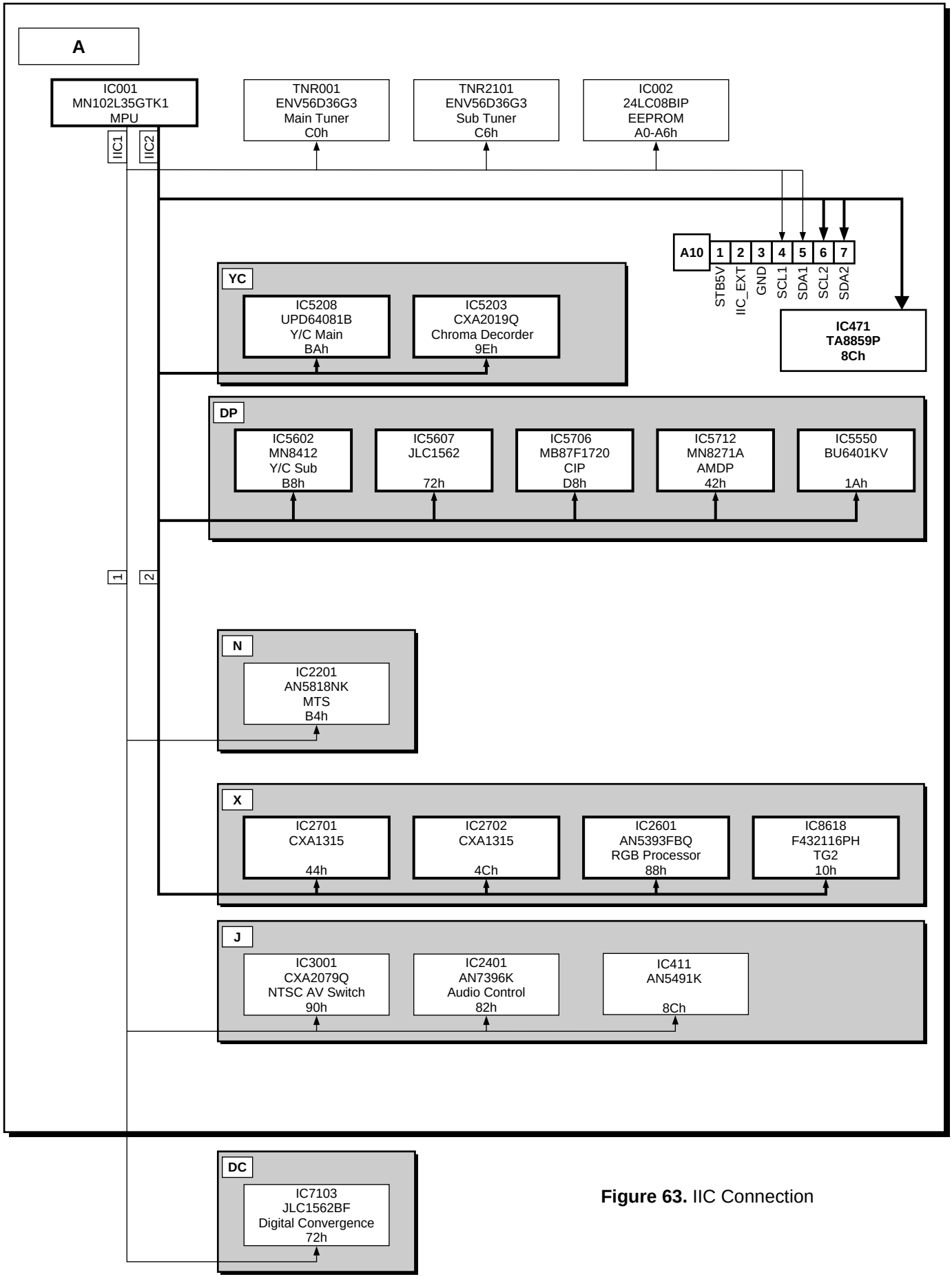


Figure 63. IIC Connection

Connectors' Information

A1	—	B1	Description
1	←	1	BT30V
2	—	2	GND
3	—	3	GND
4	—	4	GND
5	—	5	GND
6	←	6	9V
7	←	7	7V
8	←	8	7V
9	—	9	TNR_GND
10	—	10	TNR_GND

A2	—	B2	Description
1	←	1	STBY12V
2	→	2	POWER ON/ OFF
3	—	3	GND
4	—	4	GND
5	*	5	NC
6	←	6	12V
7	←	7	Sound -16V
8	←	8	Sound -16V
9	←	9	Sound 16V
10	←	10	Sound 16V

A3	—	B3	Description
1	←	1	-23V
2	←	2	-23V
3	—	3	CONV_GND
4	—	4	CONV_GND
5	←	5	23V
6	←	6	23V
7	←	7	HP
8	←	8	ABL
9	—	9	H_GND
10	→	10	H_DRIVE

A4	—	B4	Description
1	—	1	V_GND
2	—	2	GND
3	→	3	VD_IN
4	←	4	V_SAW_FB
5	→	5	H_PARA
6	→	6	EW_OUT
7	*	7	NC
8	←	8	EHT_DET_AC
9	←	9	EHT_DET_DC
10	←	10	SOS_POWER OFF

A7	—	K3	Description
1	—	1	GND
2	←	2	KEY SCAN 1
3	←	3	KEY SCAN 2
4	—	4	TP
5	—	5	GND

A11	—	CY_R	Description
1	←	1	RH(Low)
2	→	2	RH(Active)
3	→	3	RV(Active)
4	←	4	RV(Low)

A12	—	CY_G	Description
1	←	1	GH(Low)
2	→	2	GH(Active)
3	→	3	GV(Active)
4	←	4	GV(Low)

A13	—	CY_B	Description
1	←	1	BH(Low)
2	→	2	BH(Active)
3	→	3	BV(Active)
4	←	4	BV(Low)

A15	—	J15	Description
1	←	1	CHILD_C
2	—	2	GND
3	←	3	CHILD_Y/V
4	—	4	GND
5	←	5	PRNT_Y/V
6	—	6	GND
7	←	7	PRNT_C
8	—	8	GND

A16	—	J16	Description
1	→	1	SDA1
2	→	2	SCL1
3	—	3	GND
4	→	4	9V
5	→	5	TV2
6	→	6	RTV1
7	→	7	TV1
8	→	8	LTV1

A17	—	J17	Description
1	→	1	STB_12V
2	→	2	5V
3	←	3	Y(YUV)_OUT
4	—	4	GND
5	←	5	Pb_OUT
6	—	6	GND
7	←	7	Pr_OUT
8	—	8	GND

A18	—	J18	Description
1	→	1	Sound -16V
2	→	2	Sound -16V
3	→	3	Sound -16V
4	→	4	Sound 16V
5	→	5	Sound 16V
6	→	6	Sound 16V
7	—	7	GND
8	—	8	GND

A20	—	J20	Description
1	→	1	SP ON/OFF
2	→	2	VAO_MUTE
3	→	3	DOLBY_SW
4	←	4	C_SYNC_OUT
5	—	5	GND
6	→	6	I/P_SW
7	→	7	PARENT_SW
8	→	8	CHILD_SW

A25	—	YC1	Description
1	→	1	V/Y_IN
2	→	2	12V
3	→	3	C_IN
4	→	4	3.3V
5	→	5	SCL2
6	↔	6	SDA2
7	—	7	GND
8	←	8	MONITOR_Y
9	→	9	COMPONENT TV/VIDEO
10	→	10	MAIN_Y

A26	—	YC2	Description
1	—	1	GND
2	←	2	Y_OUT
3	→	3	TV/VIDEO
4	←	4	Pb_OUT

5	→	5	5V
6	←	6	Pr_OUT
7	→	7	VPH_IN
8	←	8	VP_OUT
9	—	9	GND
10	←	10	HP_OUT

A27	—	J27	Description
1	→	1	SCL1
2	→	2	SDA1
3	—	3	GND
4	→	4	HP_IN
5	→	5	9V
6	→	6	VD_IN
7	←	7	BLK_OUT
8	→	8	V_SAW_IN
9	—	9	GND
10	—	10	GND

A28	—	J28	Description
1	—	1	GND
2	—	2	GND
3	←	3	HD_OUT
4	—	4	GND
5	→	5	EHT_DET_DC
6	→	6	EHT_DET_AC
7	←	7	EW_OUT
8	—	8	GND
9	→	9	STB12V
10	→	10	FBP_IN

A19	—	DP	Description
1	—	1	GND
2	—	2	GND
3	—	3	GND
4	*	4	XCLP(NC)
5	—	5	GND
6	←	6	XDI
7	—	7	GND
8	←	8	EDVD
9	←	9	EDHD
10	—	10	GND
11	←	11	MAIN_VD
12	←	12	MAIN_HD
13	—	13	GND
14	*	14	SYNC_DET(NC)
15	←	15	HOLD_VD
16	→	16	ED_HD
17	→	17	ED_VD
18	—	18	GND
19	→	19	ED_PR

20	—	20	GND
21	→	21	ED_PB
22	—	22	GND
23	→	23	ED-Y
24	—	24	GND
25	—	25	GND
26	→	26	SUB_NT_C
27	—	27	GND
28	→	28	SUB_NT_Y/V
29	→	29	+3.3VD
30	→	30	+9V
31	→	31	EDY2
32	→	32	+9VA
33	→	33	+3.3VD
34	→	34	+5VA
35	→	35	+5VA
36	→	36	+5VD
37	→	37	+3.3VD
38	↔	38	SDA2
39	→	39	SCL2
40	*	40	NC
41	*	41	NC
42	*	42	NC
43	*	43	NC
44	*	44	NC
45	*	45	NC
46	—	46	GND
47	→	47	MAIN_HD_Y
48	—	48	GND
49	→	49	MAIN_HD_PB
50	—	50	GND
51	→	51	MAIN_HD_PR
52	—	52	GND
53	↔	53	SDA2
54	→	54	SCL2
55	—	55	GND
56	→	56	VGA_HD
57	→	57	VGA_VD
58	—	58	GND
59	←	59	PR_OUT
60	—	60	GND
61	←	61	PB_OUT
62	—	62	GND
63	←	63	YOUT
64	—	64	GND
65	—	65	GND

A60	—	X60	Description
1	—	1	GND
2	—	2	GND
3	←	3	HP

4	—	4	GND
5	—	5	GND
6	←	6	VP2
7	—	7	GND
8	→	8	ED_HD
9	→	9	ED_VD
10	—	10	GND
11	→	11	MAIN_HD
12	→	12	MAIN_VD
13	—	13	GND
14	—	14	GND
15	←	15	HOSD
16	←	16	VOSD
17	—	17	GND
18	→	18	3.3VDC
19	→	19	ABL/ACL
20	→	20	NC
21	←	21	S_ABL
22	→	22	V_MUTE
23	→	23	SCL2
24	↔	24	SDA2
25	→	25	V_BREAK2

A61	—	X61	Description
1	→	1	YM
2	—	2	GND
3	→	3	OSD_B
4	→	4	OSD_G
5	→	5	OSD_R
6	—	6	GND
7	→	7	YS
8	—	8	GND
9	—	9	GND
10	—	10	GND
11	→	11	Y_IN
12	—	12	GND
13	—	13	GND
14	→	14	PB_IN
15	—	15	GND
16	→	16	PR_IN
17	—	17	GND
18	—	18	GND
19	→	19	9V
20	→	20	9V
21	*	21	ZERO_X(NC)
22	→	22	DI
23	→	23	5V
24	→	24	12V
25	—	25	GND

A51	—	R1	Description
1	→	1	STB5V
2	←	2	RM_IN
3	—	3	GND

A22	—	N2	Description
1	→	1	9V
2	—	2	GND
3	→	3	SCL1
4	→	4	SDA1
5	←	5	MTS
6	←	6	AFT1

A21	—	N1	Description
1	→	1	IF_IN
2	—	2	GND
3	→	3	AGC_DELAY
4	←	4	RF_AGC
5	→	5	5V
6	←	6	TV1V
7	←	7	TV1L
8	←	8	TV1R

A71	—	DC1	Description
1	—	1	GND
2	←	2	RH_OUT
3	←	3	RV_OUT
4	←	4	GH_OUT
5	←	5	GV_OUT
6	←	6	BH_OUT
7	←	7	BV_OUT
8	—	8	GND

A72	—	DC2	Description
1	*	1	NC
2	→	2	5V_D
3	—	3	GND_D
4	—	4	GND_D
5	→	5	12V
6	→	6	5V
7	→	7	-12V
8	—	8	GND

A73	—	DC3	Description
1	→	1	SCL1
2	→	2	SDA1
3	—	3	GND
4	→	4	V_PULS1
5	—	5	GND
6	→	6	H_PULS
7	→	7	RCN_IN
8	←	8	RCN_STOP

A74	—	DC4	Description
1	—	1	GND
2	←	2	OSDR_OUT
3	←	3	OSDG_OUT
4	←	4	OSDB_OUT
5	←	5	OSDYS_OUT
6	—	6	GND
7	—	7	GND
8	—	8	GND

LG2	—	B12	Description
1	→	1	220V
2	*	2	NC
3	*	3	NC
4	—	4	GND
5	—	5	GND
6	→	6	HEATER

LG4	—	LB1	Description
1	→	1	220V
2	*	2	NC
3	—	3	GND
4	→	4	HEATER
5	*	5	NC
6	→	6	12V
7	←	7	S_ABL
8	→	8	G1
9	→	9	BLUE
10	—	10	GND

LG5	—	LR1	Description
1	→	1	220V
2	*	2	NC
3	—	3	GND
4	→	4	HEATER
5	*	5	NC
6	→	6	12V
7	←	7	S_ABL
8	→	8	G1
9	—	9	RED
10	—	10	GND
11	—	11	GND

SG1	—	B13	Description
1	→	1	140V
2	*	2	NC
3	—	3	GND
4	→	4	32V
5	—	5	GND

SG3	—	SR1	Description
1	→	1	130V
2	*	2	NC
3	→	3	VM
4	—	4	GND
5	—	5	GND
6	*		

SG4	—	SB1	Description
1	→	1	130V
2	*	2	NC
3	—	3	VM
4	—	4	GND
5	—	5	GND

X3	—	LG1	Description
1	→	1	GREEN
2	—	2	GND
3	*	3	NC
4	←	4	S_ABL
5	*	5	NC
6	—	6	GND
7	→	7	12V
8	→	8	RED
9	—	9	GND
10	→	10	BLUE
11	—	11	GND

X2	—	SG2	Description
1	*		
2	—	1	GND
3	→	2	VM

LG11	—	B40	Description
1	—	1	GND

J1	—	SP_L	Description
1	→	1	L_SP(W)
2	←	2	L_SP(W)_RTN
3	→	3	L_SP(T)
4	←	4	L_SP(T)_RTN

J2	—	SP_R	Description
1	→	1	R_SP(W)
2	←	2	R_SP(W)_RTN
3	→	3	R_SP(T)
4	←	4	R_SP(T)_RTN
5	*	5	NC

J3	—	Center Channel Input	Description
1	→	-	Center Channel RTN
2	←	+	Center Channel Input

J5	—	G1	Description
1	←	1	V_IN
2	*	2	NC
3	—	3	GND
4	*	4	NC
5	*	5	NC
6	←	6	L_IN
7	—	7	GND
8	←	8	R_IN
9	—	9	GND

J6	—	H6	Description
1	←	1	R2
2	—	2	GND
3	←	3	R1
4	—	4	GND
5	→	5	L2
6	—	6	GND
7	←	7	L1
8	—	8	GND
9	←	9	PR2
10	—	10	GND
11	—	11	GND
12	←	12	PR1
13	—	13	GND
14	—	14	GND
15	←	15	PB2
16	—	16	GND
17	—	17	GND
18	←	18	PB1
19	—	19	GND
20	—	20	GND
21	←	21	Y2
22	—	22	GND
23	—	23	GND
24	←	24	Y1

25	—	25	GND

B21	—	D1	Description
1	←	1	HHS
2	←	2	ABL
3	→	3	HEATER
4	←	4	ABL2
5	→	5	-23V
6	—	6	GND
7	—	7	GND
8	—	8	GND

B22	—	D2	Description
1	→	1	DM_OUT
2	→	2	DM_OUT
3	*	3	NC
4	→	4	12V
5	→	5	EW_OUT
6	→	6	HD
7	—	7	GND
8	—	8	GND

B23	—	D3	Description
1	→	1	140V
2	→	2	140V
3	*	3	NC
4	→	4	15V
5	*	5	NC
6	—	6	GND
7	←	7	H_OUT_BASE
8	←	8	H_OUT_BASE

B9	—	DY_R	Description
1	←	1	H_LOW
2	*	2	NC
3	←	3	V_LOW
4	→	4	V_HIGHT
5	*	5	NC
6	→	6	H_HIGHT

B10	—	DY_G	Description
1	—	1	H_LOW
2	*	2	NC
3	—	3	V_LOW
4	—	4	V_HIGHT
5	*	5	NC
6	—	6	H_HIGHT

B11	—	DY_B	Description
1	←	1	H_LOW
2	*	2	NC
3	←	3	V_LOW
4	→	4	V_HIGHT
5	*	5	NC
6	→	6	H_HIGHT

B5	—	T1	Description
1	→	1	AC_HOT
2	*	2	NC
3	←	3	AC_COLD

B6	—	T2	Description
1	—	1	GND
2	←	2	STB12V
3	*	3	NC

B20	—	T5	Description
1	—	1	GND

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
	CAPRISTORS	
CR2801	**EXNG131P365**	**RES-CAP 130PF/3.6 MEG**
CR2802	**EXNG131P365**	**RES-CAP 130PF/3.6 MEG**
	CAPACITORS	
C001	EEUFC1A102B	CAP,E 1000UF-10V
C004	ECUX1H103KBX	CAP,C .01UF-K-50V
C005	ECA1CM101	CAP,E 100UF/16V
C006	ECA1HM4R7	CAP,E 4.7UF/50V
C010	ECA1VM470	CAP,E 47UF/35V
C011	ECUX1H101JCX	CAP,C 100PF-J-50V
C012	ECUX1H101JCX	CAP,C 100PF-J-50V
C013	ECA1HM220	CAP,E 22UF/50V
C014	ECA1HM220	CAP,E 22UF/50V
C015	ECUX1H181JCX	CAP,C 180PF-J-50V
C016	ECEA1HNR47U	CAP,E .47UF-50V
C017	EEANA1E1R0B	CAP,E 1.0UF-25V
C020	ECUX1H181JCX	CAP,C 180PF-J-50V
C021	ECUX1H101JCX	CAP,C 100PF-J-50V
C022	ECUX1H101JCX	CAP,C 100PF-J-50V
C023	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C024	ECA0JM102	CAP,E 1000UF/6.3V
C028	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C029	ECA1HM010	CAP,E 1.0UF/50V
C030	ECA1HM220	CAP,E 22UF/50V
C031	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C034	ECUX1H272KBX	CAP,C .0027UF-K-50V
C035	ECA1HM4R7	CAP,E 4.7UF/50V
C036	ECQB1H104JM	CAP,P .1UF-J-50V
C037	ECUX1H101JCX	CAP,C 100PF-J-50V
C038	ECUX1H101JCX	CAP,C 100PF-J-50V
C039	ECUX1H220JCX	CAP,C 22PF-J-50V
C040	ECUX1H270JCX	CAP,C 27PF-J-50V
C041	ECA0JM331	CAP,E 330UF/6.3V
C042	ECQB1H223JM	CAP,P .022UF-J-50V
C043	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C044	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C045	ECEA1HNR47U	CAP,E .47UF-50V
C046	EEANA1E1R0B	CAP,E 1.0UF-25V
C047	ECA0JM222	CAP,E 2200UF/6.3V
C048	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C050	ECA1EM471B	CAP,E 470UF/25V
C051	EEUFC1E470B	CAP,E 47UF-25V
C052	TACCX103T50V	CAP,C .01UF/50V
C053	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C054	ECUX1H103KBX	CAP,C .01UF-K-50V
C055	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C063	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C064	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C081	ECA1HM010	CAP,E 1.0UF/50V
C082	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C085	ECA1EM220	CAP,E 22UF/25V

REF NO.	PART NO.	DESCRIPTION
C101	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C103	ECEA1CKA330	CAP,E 33UF/16V
C104	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C105	ECA1HHGR22B	CAP,E .22UF-50V
C109	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C111	ECA1HHGR47B	CAP,E .47UF-50V
C112	ECUX1H270JCX	CAP,C 27PF-J-50V
C115	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C116	ECEA1CKA100	CAP,E 10UF/16V
C135	ECUX1H270JCX	CAP,C 27PF-J-50V
C153	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C154	ECEA1HKAR22	CAP,E .22UF/50V
C202	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C207	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C208	ECUX1H101JCX	CAP,C 100PF-J-50V
C209	ECA1EM4R7	CAP,E 4.7UF/25V
C210	ECEA1CKA100	CAP,E 10UF/16V
C212	ECUX1H100DCX	CAP,C 10PF-D-50V
C351	ECA2EM100	CAP,E 10UF/250V
C353	ECKD2H103PU	CAP,C .01UF-P-500V
C356	ECKD3D102KB	CAP,C .001UF-K-2KV
C357	ECKF1H102KB	CAP,C .001UF-K-50V
C360	ECA1HM470	CAP,E 47UF/50V
C361	ECKF1H103ZF	CAP,C .01UF-Z-50V
C364	ECA1HM470	CAP,E 47UF/50V
C365	ECA2EM470	CAP,E 47UF-250V
C371	ECA2EM100	CAP,E 10UF/250V
C373	ECKD2H103PU	CAP,C .01UF-P-500V
C374	ECKF1H103ZF	CAP,C .01UF-Z-50V
C376	ECKD3D102KB	CAP,C .001UF-K-2KV
C377	ECKF1H102KB	CAP,C .001UF-K-50V
C380	ECA1HM470	CAP,E 47UF/50V
C381	ECKF1H103ZF	CAP,C .01UF-Z-50V
C391	ECA2EM100	CAP,E 10UF/250V
C393	ECKD2H103PU	CAP,C .01UF-P-500V
C396	ECKD3D102KB	CAP,C .001UF-K-2KV
C397	ECKF1H102KB	CAP,C .001UF-K-50V
C401	ECUX1H331JCX	CAP,C 330PF-J-50V
C414	ECA1HM4R7	CAP,E 4.7UF/50V
C417	ECUX1H103KBX	CAP,C .01UF-K-50V
C418	ECQB1H224JF	CAP,P .22UF-J-50V
C419	ECSF1EE335VB	CAP,E 3.3UF-25V
C426	EEANA1E100B	CAP,E 10UF-25V
C429	ECA1HM3R3	CAP,E 3.3UF/50V
C451	ECEA1CN101U	CAP,E 100UF-16V
C453	ECKD2H471KB	CAP,C 470PF-K-500V
C454	**ECA1HM102**	**CAP,E 1000UF/50V**
C455	ECA1HHG222E	CAP,E 2200UF-50V
C457	ECCF1H040CC	CAP,C 4PF-C-50V
C458	ECA1HHG3R3B	CAP,E 3.3UF-50V
C460	ECQB1H473JM	CAP,P .047UF-J-50V

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
C461	ECA1HM221	CAP,E 220UF/50V
C462	ECA1HM471	CAP,E 470UF/50V
C464	ECQM1104JZ	CAP,P .1UF-J-100V
C465	ECEA1HN2R2U	CAP,E 2.2UF/50V
C466	ECCF1H271JC	CAP,C 270PF-J-50V
C471	ECUX1H221JCX	CAP,C 220PF-J-50V
C472	ECQB1H103JM	CAP,P .01UF-J-50V
C473	ECSF1EE225VB	CAP,E 2.2UF-25V
C475	ECA1HMR47	CAP,E .47UF/50V
C476	ECSF1EE335VB	CAP,E 3.3UF-25V
C478	ECUX1H103KBX	CAP,C .01UF-K-50V
C479	ECA1CM101	CAP,E 100UF/16V
C482	ECA1HM010	CAP,E 1.0UF/50V
C501	ECA1VHG102E	CAP,E 1000UF/35V
C502	ECQB1H223JM	CAP,P .022UF-J-50V
C503	ECQE2104KF	CAP,P .10UF-K-200V
C504	ECKD2H102KB	CAP,C .001UF-K-500V
C505	ECKD2H102KB	CAP,C .001UF-K-500V
C506	ECQV1H224JM	CAP,P .22UF-J-50V
C531	ECQB1H272JM	CAP,P 2700PF-J-50V
C532	ECUX1H221JCX	CAP,C 220PF-J-50V
C533	ECA1HM100	CAP,E 10UF/50V
C534	ECQB1H153JM	CAP,P .015UF-J-50V
C535	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C536	ECA1CM471	CAP,E 470UF/16V
C537	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C538	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C539	ECQB1H223JM	CAP,P .022UF-J-50V
C541	ECUX1H331JCX	CAP,C 330PF-J-50V
C548	ECQB1H222JM	CAP,P 2200PF-J-50V
C551	**ECKD3D221JB**	**CAP,C 220PF-J-2KV**
C552	**ECKD3D152JB**	**CAP,C .0015UF-J-2KV**
C553	**ECKD3D152JB**	**CAP,C .0015UF-J-2KV**
C554	**ECQB1H563JM**	**CAP,P .056UF-J-50V**
C555	**ECWH16182JVY**	**CAP,P 1800PF-J-1.5KV**
C557	**ECWH16392JVY**	**CAP,P 3900PF-J-1.5KV**
C558	**ECQF4183JZH**	**CAP,P .018UF-J-400V**
C559	**ECKD3D391JB**	**CAP,C 390PF-J-2KV**
C560	**ECWF2474JSR**	**CAP,P .47UF-J-200V**
C561	ECQB1H223JM	CAP,P .022UF-J-50V
C562	ECQB1H223JM	CAP,P .022UF-J-50V
C563	ECEA1HNR47U	CAP,E .47UF-50V
C564	ECKF1H472KB	CAP,C .0047UF-K-50V
C565	**ECWH16392JVY**	**CAP,P 3900PF-J-1.5KV**
C582	ECEA1CN220U	CAP,E 22UF-16V
C583	ECEA1HN2R2U	CAP,E 2.2UF/50V
C650	ECA1HM100	CAP,E 10UF/50V
C653	ECA1HM010	CAP,E 1.0UF/50V
C654	ECA1HM010	CAP,E 1.0UF/50V
C751	ECKF1H151KB	CAP,C 150PF-K-50V
C752	ECKF1H102KB	CAP,C .001UF-K-50V

REF NO.	PART NO.	DESCRIPTION
C753	ECQB1H562JM	CAP,P 5600PF-J-50V
C755	ECA1CM101	CAP,E 100UF/16V
C756	ECKD2H561KB	CAP,C 560PF-K-500V
C757	ECQB1H272JM	CAP,P 2700PF-J-50V
C759	ECKR1H121KB5	CAP,C 120PF-K-50V
C760	ECKD2H391KB	CAP,C 390PF-K-500V
C762	ECQM2104KZ	CAP,P .1UF-K-200V
C763	ECKD2H561KB	CAP,C 560PF-K-500V
C764	ECQE1335KF	CAP,P 3.3UF-K-100V
C765	ECQB1H222JM	CAP,P 2200PF-J-50V
C771	ECA1CM101	CAP,E 100UF/16V
C772	ECUX1H102JCX	CAP,C .001UF-J-50V
C804	**ECKD2H103ZF**	**CAP,C .01UF-Z-500V**
C805	**ECKD2H103ZF**	**CAP,C .01UF-Z-500V**
C806	**ECKD2H103ZF**	**CAP,C .01UF-Z-500V**
C807	ECKF1H103KB	CAP,C .01UF-K-50V
C809	ECQB1H223JM	CAP,P .022UF-J-50V
C810	ECKD2H102KB	CAP,C .001UF-K-500V
C811	**ECA2EM101**	**CAP,E 100UF-250V**
C815	ECQB1H152JM	CAP,P 1500PF-J-50V
C816	**EC0S2DA471BB**	**CAP,E 470UF/160V**
C817	**EC0S2DA471BB**	**CAP,E 470UF/160V**
C818	ECKD3A392KB	CAP,C 3900PF-K-1KV
C819	ECQB1H102JM	CAP,P 1000PF-J-50V
C820	ECA1VM470	CAP,E 47UF/35V
C821	ECQB1H102JM	CAP,P 1000PF-J-50V
C822	ECKD3D391KB	CAP,C 390PF-K-2KV
C823	ECQB1H471JF	CAP,P .0047UF-J-50V
C824	ECA1VHG221B	CAP,E 220UF-35V
C825	ECQB1H473JM	CAP,P .047UF-J-50V
C826	ECQB1H683JM	CAP,P .068UF-J-50V
C827	ECQB1H104JM	CAP,P .1UF-J-50V
C828	ECQB1H473JM	CAP,P .047UF-J-50V
C829	**ECKCNB472ME**	**CAP,C 4700PF-M-250V**
C830	**ECKCNB472ME**	**CAP,C 4700PF-M-250V**
C831	**ECKD3D681KB**	**CAP,C 680PF-K-2KV**
C832	**EC0S2CB821BB**	**CAP,E 820UF-160V**
C833	**ECKD3A471KB**	**CAP,C 470PF-K-1KV**
C834	**ECA1EM102**	**CAP,E 1000UF/25V**
C835	**ECKD3A471KB**	**CAP,C 470PF-K-1KV**
C836	**EEUFC1C272LE**	**CAP,E 2700UF-16V**
C837	**ECKD3A471KB**	**CAP,C 470PF-K-1KV**
C838	**EEUFC1V222E**	**CAP,E 2200UF-35V**
C839	**ECKD3A471KB**	**CAP,C 470PF-K-1KV**
C840	**EEUFC1V332E**	**CAP,E 3300UF-35V**
C841	**ECKD3A471KB**	**CAP,C 470PF-K-1KV**
C842	**ECA1HM102**	**CAP,E 1000UF/50V**
C844	**ECKD3D681KB**	**CAP,C 680PF-K-2KV**
C845	ECQB1H104JM	CAP,P .1UF-J-50V
C846	ECA1CM101	CAP,E 100UF/16V
C847	ECA0JM331	CAP,E 330UF/6.3V

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
C848	ECA1CM101	CAP,E 100UF/16V
C850	ECA1EM220	CAP,E 22UF/25V
C851	ECA1CM470	CAP,E 47UF/16V
C852	ECA1VHG102B	CAP,E 1000UF-35V
C853	EEUFC1C471B	CAP,E 470UF-16V
C855	EEUFC1C471B	CAP,E 470UF-16V
C860	**ECEA160V33Z**	**CAP,E 33UF/160V**
C869	ECA1HM100	CAP,E 10UF/50V
C870	**ECKCNB472ME**	**CAP,C 4700PF-M-250V**
C873	ECA1CM101	CAP,E 100UF/16V
C876	ECA1CM101	CAP,E 100UF/16V
C877	ECA0JM222B	CAP,E 2200UF/6.3V
C878	ECA1VM470	CAP,E 47UF/35V
C879	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C880	ECA1CM101	CAP,E 100UF/16V
C881	ECA1CM101	CAP,E 100UF/16V
C882	ECA1CM101	CAP,E 100UF/16V
C883	ECA1CM101	CAP,E 100UF/16V
C885	ECA1HM470	CAP,E 47UF/50V
C887	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C888	ECA1HM470	CAP,E 47UF/50V
C889	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C890	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C891	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C892	ECA1CM101	CAP,E 100UF/16V
C893	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C894	ECA1CM101	CAP,E 100UF/16V
C895	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C897	ECA1CM101	CAP,E 100UF/16V
C898	ECA0JM102	CAP,E 1000UF/6.3V
C899	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C901	ECEA1CN100U	CAP,E 10UF-16V
C902	ECA1CM101	CAP,E 100UF/16V
C907	ECCF1H121JC	CAP,C 120PF-J-50V
C932	ECA1HM101	CAP,E 100UF/50V
C952	ECA1HM101	CAP,E 100UF/50V
C955	ECQM2103KZ	CAP,P .01UF-K-200V
C958	ECA2CM100	CAP,E 10UF-160V
C961	ECA2CM100	CAP,E 10UF-160V
C962	ECKF1H103ZF	CAP,C .01UF-Z-50V
C964	ECA1CM101	CAP,E 100UF/16V
C966	ECA1CM101	CAP,E 100UF/16V
C972	ECKF1H103ZF	CAP,C .01UF-Z-50V
C973	ECQM2103KZ	CAP,P .01UF-K-200V
C974	ECA1HM100	CAP,E 10UF/50V
C976	ECQM2103KZ	CAP,P .01UF-K-200V
C977	ECKF1H103ZF	CAP,C .01UF-Z-50V
C980	ECA2CM100	CAP,E 10UF-160V
C981	ECA1CM101	CAP,E 100UF/16V
C982	ECA1CM101	CAP,E 100UF/16V
C983	ECQM2103KZ	CAP,P .01UF-K-200V

REF NO.	PART NO.	DESCRIPTION
C984	ECKF1H103ZF	CAP,C .01UF-Z-50V
C987	ECA2CM100	CAP,E 10UF-160V
C988	ECA2CM100	CAP,E 10UF-160V
C989	ECA2CM100	CAP,E 10UF-160V
C991	ECQM2103KZ	CAP,P .01UF-K-200V
C992	ECKF1H103ZF	CAP,C .01UF-Z-50V
C994	ECA1CM101	CAP,E 100UF/16V
C995	ECQM2103KZ	CAP,P .01UF-K-200V
C996	ECKF1H103ZF	CAP,C .01UF-Z-50V
C997	ECA1CM101	CAP,E 100UF/16V
C1348	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C1350	ECUX1H272JCX	CAP,C .0027UF-J-50V
C1351	ECJ2VB1C104K	CAP,C .1UF-I-16V
C1354	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C1501	ECKD2H101KB	CAP,C 100PF-K-500V
C1502	ECEA1HN100U	CAP,E 10UF/50V
C1503	**ECQE12473KF**	**CAP,P .047UF-K-1.25KV**
C1504	ECEA1EN101U	CAP,E 100UF-25V
C1505	ECA1CM101	CAP,E 100UF/16V
C1506	ECQB1H223JM	CAP,P .022UF-J-50V
C1507	ECQB1H103JM	CAP,P .01UF-J-50V
C1508	ECQB1H103JM	CAP,P .01UF-J-50V
C1509	ECA1CM101	CAP,E 100UF/16V
C1511	ECQB1H471JF	CAP,P .0047UF-J-50V
C1581	ECA1HM4R7	CAP,E 4.7UF/50V
C1582	ECKF1H103ZF	CAP,C .01UF-Z-50V
C1583	ECA1CM221	CAP,E 220UF/16V
C1584	ECA1VM470	CAP,E 47UF/35V
C1585	ECA1HM220	CAP,E 22UF/50V
C1586	**ECA1HM470**	**CAP,E 47UF/50V**
C1587	ECA1CM470	CAP,E 47UF/16V
C1901	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V
C1902	ECUX1H151JCX	CAP,C 150PF-J-50V
C1903	ECQB1H104JM	CAP,P .1UF-J-50V
C1905	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V
C1906	ECUX1H102JCX	CAP,C .001UF-J-50V
C1907	ECQB1H104JM	CAP,P .1UF-J-50V
C1908	ECQB1H104JM	CAP,P .1UF-J-50V
C1909	ECEA1CN100U	CAP,E 10UF-16V
C1910	ECQB1H683JM	CAP,P .068UF-J-50V
C1911	ECA1CM101	CAP,E 100UF/16V
C1913	ECQB1H472JM	CAP,P 4700PF-J-50V
C1914	ECEA1CN100U	CAP,E 10UF-16V
C1915	ECQB1H104JM	CAP,P .1UF-J-50V
C1916	ECA1HM100	CAP,E 10UF/50V
C1917	ECA1CM101	CAP,E 100UF/16V
C2101	ECA1CM101	CAP,E 100UF/16V
C2105	ECA1CM101	CAP,E 100UF/16V
C2106	ECA1HM4R7	CAP,E 4.7UF/50V
C2108	ECA1CM101	CAP,E 100UF/16V
C2109	ECJ2VF1H103Z	CAP,C .01UF-Z-50V

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
C2110	ECUX1H471JCX	CAP,C 470PF-J-50V
C2111	ECA1HHGR22B	CAP,E .22UF-50V
C2115	ECA1HM100	CAP,E 10UF/50V
C2116	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2117	ECUX1H270JCX	CAP,C 27PF-J-50V
C2118	ECUX1H270JCX	CAP,C 27PF-J-50V
C2119	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2120	ECA1HHGR47B	CAP,E .47UF-50V
C2121	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2123	ECUX1H270JCX	CAP,C 27PF-J-50V
C2124	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2126	ECA1HMR22	CAP,E .22UF/50V
C2130	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2201	AP335K016CAE	CAP,T 3.3UF/16V
C2202	ECEA1EKA4R7	CAP,E 4.7UF/25V
C2203	ECEA1HKA010	CAP,E 1.0UF/50V
C2204	ECEA1EKA4R7	CAP,E 4.7UF/25V
C2205	ECEA1EKA4R7	CAP,E 4.7UF/25V
C2206	ECEA1EKA4R7	CAP,E 4.7UF/25V
C2207	ECA1EM4R7	CAP,E 4.7UF/25V
C2208	ECEA1EKA4R7	CAP,E 4.7UF/25V
C2210	ECEA1HKAR33	CAP,E .33UF/50V
C2211	ECEA1HUR68	CAP,E .68UF/50V
C2212	ECA1HM2R2	CAP,E 2.2UF/50V
C2213	ECEA1HKA100	CAP,E 10UF/50V
C2214	ECQB1H104JM	CAP,P .1UF-J-50V
C2215	ECQB1H223JM	CAP,P .022UF-J-50V
C2216	ECUX1H332KBX	CAP,C .0033UF-K-50V
C2219	AP106K016CAE	CAP,T 10UF/16V
C2220	ECEA1CKA100	CAP,E 10UF/16V
C2221	ECUX1H101JCX	CAP,C 100PF-J-50V
C2222	**ECUX1H472KBX**	**CAP,C .0047UF-K-50V**
C2223	**TCUX1H103KBN**	**CAP,C .01UF-K-50V**
C2231	ECEA1CKA101	CAP,E 100UF/16V
C2232	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2301	ECQB1H474JF	CAP,P .47UF-J-50V
C2302	ECQB1H474JF	CAP,P .47UF-J-50V
C2303	ECUX1H561JCX	CAP,C 560PF-J-50V
C2304	ECUX1H561JCX	CAP,C 560PF-J-50V
C2305	ECJ2VF1H104Z	CAP,C .1UF-Z-50V
C2306	ECJ2VF1H104Z	CAP,C .1UF-Z-50V
C2307	ECUX1H472KBX	CAP,C .0047UF-K-50V
C2308	ECUX1H472KBX	CAP,C .0047UF-K-50V
C2309	ECUX1H101JCX	CAP,C 100PF-J-50V
C2310	ECUX1H101JCX	CAP,C 100PF-J-50V
C2311	ECUX1H682ZFX	CAP,C 6800PF-Z-50V
C2312	ECUX1H682ZFX	CAP,C 6800PF-Z-50V
C2313	ECJ2VF1H104Z	CAP,C .1UF-Z-50V
C2314	ECJ2VF1H104Z	CAP,C .1UF-Z-50V
C2315	ECJ2VF1H104Z	CAP,C .1UF-Z-50V
C2316	ECA1HM221	CAP,E 220UF/50V
C2317	ECJ2VF1H104Z	CAP,C .1UF-Z-50V
C2318	ECA1HM221	CAP,E 220UF/50V
C2319	ECJ2VF1H104Z	CAP,C .1UF-Z-50V
C2320	ECJ2VF1H104Z	CAP,C .1UF-Z-50V
C2321	ECEA1HN220UB	CAP,E 22UF/50V
C2322	ECEA1HN220UB	CAP,E 22UF/50V
C2323	ECA1EM102	CAP,E 1000UF/25V
C2324	ECA1EM102	CAP,E 1000UF/25V
C2325	ECA1EM102	CAP,E 1000UF/25V
C2326	ECA1EM102	CAP,E 1000UF/25V
C2327	ECEA1CKN100	CAP,E 10UF/16V
C2328	ECEA1CKN100	CAP,E 10UF/16V
C2331	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2332	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2333	ECEA1CKN100	CAP,E 10UF/16V
C2334	ECEA1CKN100	CAP,E 10UF/16V
C2335	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2337	ECA50YT2R2KB	CAP,E 2.2UF-50V
C2338	ECA50YT2R2KB	CAP,E 2.2UF-50V
C2339	ECJ2VF1H104Z	CAP,C .1UF-Z-50V
C2340	ECJ2VF1H104Z	CAP,C .1UF-Z-50V
C2341	ECUX1H221JCX	CAP,C 220PF-J-50V
C2342	ECUX1H221JCX	CAP,C 220PF-J-50V
C2343	ECA1EM102	CAP,E 1000UF/25V
C2344	ECA1EM102	CAP,E 1000UF/25V
C2345	ECA1EM102	CAP,E 1000UF/25V
C2346	ECA1EM102	CAP,E 1000UF/25V
C2351	ECA1VM101	CAP,E 100UF/35V
C2352	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2401	ECJ2VB1E473K	CAP,C .047UF-K-25V
C2402	ECUX1H153KBX	CAP,C .015UF-K-50V
C2403	ECJ2VB1E473K	CAP,C .047UF-K-25V
C2404	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2405	ECJ2VB1C104K	CAP,C .1UF-I-16V
C2406	ECUX1H153KBX	CAP,C .015UF-K-50V
C2407	ECEA1CN100U	CAP,E 10UF-16V
C2408	ECA1HM100	CAP,E 10UF/50V
C2409	ECA1HM100	CAP,E 10UF/50V
C2410	ECA1HM100	CAP,E 10UF/50V
C2411	ECA1HM100	CAP,E 10UF/50V
C2412	ECA1HM100	CAP,E 10UF/50V
C2413	ECA1HM0R1	CAP,E 0.1UF/50V
C2414	ECA1HM100	CAP,E 10UF/50V
C2415	ECA1HM100	CAP,E 10UF/50V
C2416	ECA1HM0R1	CAP,E 0.1UF/50V
C2417	ECA1HMR47	CAP,E .47UF/50V
C2418	ECA1CM101	CAP,E 100UF/16V
C2419	ECA1HM100	CAP,E 10UF/50V
C2420	ECA1HM100	CAP,E 10UF/50V
C2421	ECEA1CN100U	CAP,E 10UF-16V
C2422	ECA1HM100	CAP,E 10UF/50V

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
C2423	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V
C2424	ECA1HM010	CAP,E 1.0UF/50V
C2425	ECA1HM100	CAP,E 10UF/50V
C2426	ECEA1CN100U	CAP,E 10UF-16V
C2427	ECEA1CN100U	CAP,E 10UF-16V
C2428	ECA1HM100	CAP,E 10UF/50V
C2429	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V
C2430	ECA1HM010	CAP,E 1.0UF/50V
C2431	ECEA1CN220U	CAP,E 22UF-16V
C2501	ECA1CM101	CAP,E 100UF/16V
C2502	ECEA1CN100U	CAP,E 10UF-16V
C2503	ECEA1CN100U	CAP,E 10UF-16V
C2505	ECEA1CN470U	CAP,E 47UF-16V
C2506	ECUX1H221JCX	CAP,C 220PF-J-50V
C2510	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2511	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2512	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2513	TCUY1C225ZFN	CAP,C 2.2UF-Z-16V
C2517	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2518	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2524	TCUY1C225ZFN	CAP,C 2.2UF-Z-16V
C2526	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2529	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2530	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2531	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2533	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2534	ECUX1H820JCX	CAP,C 82PF-J-50V
C2535	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2536	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2537	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2539	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2540	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2541	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2542	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2543	ECJ2VF1H333Z	CAP,C .033UF-Z-50V
C2544	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2545	ECA1CM101	CAP,E 100UF/16V
C2547	ECA1CM101	CAP,E 100UF/16V
C2548	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2549	ECA1CM101	CAP,E 100UF/16V
C2551	TCUY1C225ZFN	CAP,C 2.2UF-Z-16V
C2552	TCUY1C105ZFN	CAP,C 1UF-Z-16V
C2553	TCUY1C105ZFN	CAP,C 1UF-Z-16V
C2587	TCUY1C105KBM	CAP,C 1UF-K-16V
C2601	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2603	ECA1HM220	CAP,E 22UF/50V
C2604	ECA1HM220	CAP,E 22UF/50V
C2606	TCUY1C105ZFN	CAP,C 1UF-Z-16V
C2607	TCUY1C105ZFN	CAP,C 1UF-Z-16V
C2608	TCUY1C105ZFN	CAP,C 1UF-Z-16V
C2610	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2612	ECA1HM100	CAP,E 10UF/50V
C2613	TCUY1C105ZFN	CAP,C 1UF-Z-16V
C2614	ECUX1H330JCX	CAP,C 33PF-J-50V
C2615	TCUY1C105ZFN	CAP,C 1UF-Z-16V
C2616	TCUY1C105ZFN	CAP,C 1UF-Z-16V
C2617	TCUY1C105ZFN	CAP,C 1UF-Z-16V
C2618	TCUY1C105ZFN	CAP,C 1UF-Z-16V
C2619	TCUY1C105ZFN	CAP,C 1UF-Z-16V
C2620	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2623	ECEA1AKA221	CAP,E 220UF/10V
C2627	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2628	ECEA1AKA221	CAP,E 220UF/10V
C2629	ECEA1AKA221	CAP,E 220UF/10V
C2631	ECEA1AKA221	CAP,E 220UF/10V
C2632	ECEA1AKA221	CAP,E 220UF/10V
C2635	ECEA1AKA221	CAP,E 220UF/10V
C2636	ECEA1AKA221	CAP,E 220UF/10V
C2637	ECEA1AKA221	CAP,E 220UF/10V
C2638	ECEA1AKA221	CAP,E 220UF/10V
C2639	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2640	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2641	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2642	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2643	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2644	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2645	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2646	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2647	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2650	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2651	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2653	ECA1HM100	CAP,E 10UF/50V
C2654	TCUY1C105ZFN	CAP,C 1UF-Z-16V
C2655	TCUY1C105ZFN	CAP,C 1UF-Z-16V
C2656	TCUY1C105ZFN	CAP,C 1UF-Z-16V
C2657	TCUY1C105ZFN	CAP,C 1UF-Z-16V
C2664	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2665	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2666	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2701	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2702	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2703	ECA1HM100	CAP,E 10UF/50V
C2704	ECA1CM101	CAP,E 100UF/16V
C2705	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2706	ECA1CM101	CAP,E 100UF/16V
C2707	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2708	ECA1CM101	CAP,E 100UF/16V
C2709	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C2710	ECJ2VF1H104Z	CAP,C .1UF-Z-50V
C2802	**ECQU2A224MV**	**CAP,P .22UF-M-250VAC**
C2805	**ECKDNA221MB**	**CAP,C 220PF-M-125V**
C2806	**ECKDNA221MB**	**CAP,C 220PF-M-125V**

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
C2807	ECA1EM471	CAP,E 470UF/25V
C2808	TACCW103T50V	CAP,C .01UF/50V
C2851	ECA1VM470	CAP,E 47UF/35V
C2854	ECCF1H270JC	CAP,C 27PF-J-50V
C2856	ECA1CM101	CAP,E 100UF/16V
C2866	ECA1VM470	CAP,E 47UF/35V
C2867	ECA1CM101	CAP,E 100UF/16V
C2868	ECA1CM101	CAP,E 100UF/16V
C2869	ECA1CM101	CAP,E 100UF/16V
C2870	ECA1CM101	CAP,E 100UF/16V
C2871	ECA1CM101	CAP,E 100UF/16V
C2872	ECA1CM101	CAP,E 100UF/16V
C2873	ECA1CM101	CAP,E 100UF/16V
C2875	ECA1CM101	CAP,E 100UF/16V
C2961	ECUX1H101JCX	CAP,C 100PF-J-50V
C2962	ECUX1H101JCX	CAP,C 100PF-J-50V
C3001	ECA1CM101	CAP,E 100UF/16V
C3002	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C3003	ECEA1HN010U	CAP,E 1UF/50V
C3004	ECA1VM470	CAP,E 47UF/35V
C3005	ECA1CM101	CAP,E 100UF/16V
C3006	ECA1HM100	CAP,E 10UF/50V
C3007	ECA1HM100	CAP,E 10UF/50V
C3008	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V
C3009	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V
C3010	ECA1CM101	CAP,E 100UF/16V
C3011	ECA1CM101	CAP,E 100UF/16V
C3012	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V
C3054	ECA1CM471	CAP,E 470UF/16V
C3071	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C3072	ECA1HM100	CAP,E 10UF/50V
C3073	ECA1HM100	CAP,E 10UF/50V
C3074	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V
C3075	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V
C3076	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C3077	ECA1HM100	CAP,E 10UF/50V
C3078	ECA1HM100	CAP,E 10UF/50V
C3079	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V
C3080	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V
C3081	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V
C3082	EEUNA1A470B	CAP,E 47UF-125V
C3083	ECA1HM100	CAP,E 10UF/50V
C3084	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V
C3085	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V
C3111	EEUNA1A470B	CAP,E 47UF-125V
C3141	ECA1CM101	CAP,E 100UF/16V
C3142	ECA1HM101	CAP,E 100UF/50V
C3151	ECEA1CN100U	CAP,E 10UF-16V
C3152	ECJ2VF1H104Z	CAP,C .1UF-Z-50V
C3153	ECA1HMR47	CAP,E .47UF/50V
C3154	ECA1HMR47	CAP,E .47UF/50V

REF NO.	PART NO.	DESCRIPTION
C3155	ECUX1H470JCX	CAP,C 47PF-J-50V
C3156	ECUX1H101JCX	CAP,C 100PF-J-50V
C3157	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C3158	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V
C3161	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V
C3164	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V
C3165	EEUNA1A470B	CAP,E 47UF-125V
C3166	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V
C3169	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V
C3172	ECA1HM100	CAP,E 10UF/50V
C3173	ECA1VM470	CAP,E 47UF/35V
C3174	ECJ2VB1C104K	CAP,C .1UF-I-16V
C3175	ECJ2VB1C104K	CAP,C .1UF-I-16V
C3176	ECA1CM101	CAP,E 100UF/16V
C3177	ECUX1H220JCX	CAP,C 22PF-J-50V
C3178	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V
C3179	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V
C3180	ECUX1H220JCX	CAP,C 22PF-J-50V
C3181	ECJ2VB1C104K	CAP,C .1UF-I-16V
C3182	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V
C3183	EEUNA1A470B	CAP,E 47UF-125V
C3184	ECA1VM470	CAP,E 47UF/35V
C3185	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C3190	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V
C3191	ECJ2VB1C104K	CAP,C .1UF-I-16V
C3198	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V
C3199	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V
C3200	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V
C3201	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V
C3202	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V
C3203	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V
C3205	ECA1VM470	CAP,E 47UF/35V
C3206	ECA1VM470	CAP,E 47UF/35V
C3208	ECA1VM470	CAP,E 47UF/35V
C3209	ECA1VM470	CAP,E 47UF/35V
C3211	ECA1VM470	CAP,E 47UF/35V
C3212	EEUNA1A470B	CAP,E 47UF-125V
C3213	ECA1VM470	CAP,E 47UF/35V
C3214	ECA1VM470	CAP,E 47UF/35V
C3215	ECA1VM470	CAP,E 47UF/35V
C3216	ECA1VM470	CAP,E 47UF/35V
C3217	ECA1VM470	CAP,E 47UF/35V
C3218	ECA1VM470	CAP,E 47UF/35V
C3219	ECA1VM470	CAP,E 47UF/35V
C3220	ECA1VM470	CAP,E 47UF/35V
C3222	ECA1VM470	CAP,E 47UF/35V
C3224	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V
C3225	EEUNA1A470B	CAP,E 47UF-125V
C3352	ECA1HM220	CAP,E 22UF/50V
C3353	ECKF1H103ZF	CAP,C .01UF-Z-50V
C3362	ECA1HM220	CAP,E 22UF/50V

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
C3363	ECKF1H103ZF	CAP,C .01UF-Z-50V
C3372	ECA1HM220	CAP,E 22UF/50V
C3373	ECKF1H103ZF	CAP,C .01UF-Z-50V
C5201	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5202	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5203	ECEA1CKA100	CAP,E 10UF/16V
C5206	ECUX1H101JCX	CAP,C 100PF-J-50V
C5209	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5215	ECEA1EKA4R7	CAP,E 4.7UF/25V
C5216	TCUY1C105KBM	CAP,C 1UF-K-16V
C5217	ECUX1H822KBX	CAP,C .0082UF-K-50V
C5219	TCUY1C474MBM	CAP,C .47UF-M-16V
C5220	TCUY1C474MBM	CAP,C .47UF-M-16V
C5222	ECUX1H471JCX	CAP,C 470PF-J-50V
C5223	TCUY1C474MBM	CAP,C .47UF-M-16V
C5224	ECUX1H103KBX	CAP,C .01UF-K-50V
C5225	TCUY1C105KBM	CAP,C 1UF-K-16V
C5227	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5229	ECUX1H150JCX	CAP,C 15PF-J-50V
C5231	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5240	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5250	ECJ2VB1C104K	CAP,C .1UF-I-16V
C5259	ECEA1CKA220	CAP,E 22UF/16V
C5261	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5263	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5265	ECEA1CKA100	CAP,E 10UF/16V
C5266	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5268	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5269	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5272	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5275	ECUX1H470JCX	CAP,C 47PF-J-50V
C5276	ECEA1CKA100	CAP,E 10UF/16V
C5277	ECJ2VB1C104K	CAP,C .1UF-I-16V
C5278	ECUX1H103KBX	CAP,C .01UF-K-50V
C5280	ECEA1CKA220	CAP,E 22UF/16V
C5281	ECUX1H101JCX	CAP,C 100PF-J-50V
C5283	TACCZ0J335MT	CAP,C 3.3UF-M-6.3V
C5285	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5286	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5287	ECUX1H220JCX	CAP,C 22PF-J-50V
C5289	ECUX1H220JCX	CAP,C 22PF-J-50V
C5290	ECEA1CKA220	CAP,E 22UF/16V
C5291	ECEA1CKA220	CAP,E 22UF/16V
C5292	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5293	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5294	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5296	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5297	TCUY0J685MBM	CAP,C 6.8UF-M-6.3V
C5298	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5299	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5300	ECJ2VF1C104Z	CAP,C .1UF-Z-16V

REF NO.	PART NO.	DESCRIPTION
C5302	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5303	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5304	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5305	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5306	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5307	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5308	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5310	ECEA1CKA100	CAP,E 10UF/16V
C5311	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5315	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5322	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5326	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5327	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C5328	ECEA1CKA470	CAP,E 47UF/16V
C5330	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5331	ECJ2VB1C104K	CAP,C .1UF-I-16V
C5333	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5334	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5335	ECUX1H220JCX	CAP,C 22PF-J-50V
C5336	ECUX1H120JCX	CAP,C 12PF-J-50V
C5337	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5338	ECEA1CKA100	CAP,E 10UF/16V
C5340	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C5343	ECUX1H101JCX	CAP,C 100PF-J-50V
C5344	ECEA1CKA101	CAP,E 100UF/16V
C5345	ECUX1H391JCX	CAP,C 390PF-J-50V
C5346	ECUX1H103KBX	CAP,C .01UF-K-50V
C5347	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5348	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C5550	TACCZ0J335MT	CAP,C 3.3UF-M-6.3V
C5551	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5552	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5553	ECEV1CG220GP	CAP,E 22UF-16V
C5554	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5555	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5556	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5557	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5558	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5559	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5560	ECEV1AG100NR	CAP,E 10UF-10V
C5561	ECJ1VB1C103K	CAP,C .010UF-K-16V
C5602	ECUX1H151JCV	CAP,C 150PF-J-50V
C5603	ECUX1H101JCV	CAP,C 100PF-J-50V
C5604	ECUX1H151JCV	CAP,C 150PF-J-50V
C5605	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5606	TACCZ0J335MT	CAP,C 3.3UF-M-6.3V
C5607	ECJ1VB1H103K	CAP,C .010UF-K-50V
C5608	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5609	ECEV1CG100GR	CAP,E 10UF-16V
C5610	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5611	ECEV1CG100GR	CAP,E 10UF-16V

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
C5612	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5613	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5614	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5615	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5616	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5617	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5618	TACCZ0J335MT	CAP,C 3.3UF-M-6.3V
C5619	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5620	ECUX1H150JCV	CAP,C 15PF-J-50V
C5621	TACCZ0J335MT	CAP,C 3.3UF-M-6.3V
C5622	ECJ1VB1H103K	CAP,C .010UF-K-50V
C5623	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5624	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5625	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5626	ECJ1VB1H103K	CAP,C .010UF-K-50V
C5627	ECJ1VB1H103K	CAP,C .010UF-K-50V
C5628	ECEV1CG100GR	CAP,E 10UF-16V
C5631	TACCZ0J335MT	CAP,C 3.3UF-M-6.3V
C5632	ECUX1H471JCV	CAP,C 470PF-J-50V
C5633	ECJ1VB1H103K	CAP,C .010UF-K-50V
C5634	ECJ1VB1H103K	CAP,C .010UF-K-50V
C5635	ECUX1H150JCV	CAP,C 15PF-J-50V
C5637	ECJ1VB1H103K	CAP,C .010UF-K-50V
C5638	TCUY1C564KBM	CAP,C .56UF-K-16V
C5639	ECJ1VB1H103K	CAP,C .010UF-K-50V
C5640	ECJ1VB1H562K	CAP,C .0056UF-K-50V
C5641	ECUX1H222KBV	CAP,C 2200PF-J-50V
C5642	ECUX1H120JCV	CAP,C 12PF-J-50V
C5643	ECJ1VB1H103K	CAP,C .010UF-K-50V
C5644	ECJ1VB1H103K	CAP,C .010UF-K-50V
C5645	ECEV0JG101GP	CAP,E 100UF-6.3V
C5647	ECJ1VB1H472K	CAP,C .0047UF-K-50V
C5648	ECJ1VB1H103K	CAP,C .010UF-K-50V
C5649	ECUX1H560JCV	CAP,C 56PF-J-50V
C5650	ECJ1VB1H103K	CAP,C .010UF-K-50V
C5651	ECUX1H223KBX	CAP,C .022UF-K-50V
C5652	ECUX1H100CCV	CAP,C 10PF-C-50V
C5653	TCUY1C105KBM	CAP,C 1UF-K-16V
C5654	ECJ1VB1H332K	CAP,C .0033UF-K-50V
C5655	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5657	TACCZ0J335MT	CAP,C 3.3UF-M-6.3V
C5658	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5659	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5660	TACCZ0J335MT	CAP,C 3.3UF-M-6.3V
C5710	ECJ1VB1H152K	CAP,C .015UF-K-50V
C5718	ECEV0JG101GP	CAP,E 100UF-6.3V
C5719	ECJ1VB1H102K	CAP,C .001UF-K-50V
C5720	ECJ1VB1H102K	CAP,C .001UF-K-50V
C5721	ECJ1VB1H102K	CAP,C .001UF-K-50V
C5722	ECEV0JG101GP	CAP,E 100UF-6.3V
C5723	ECJ1VB1H102K	CAP,C .001UF-K-50V
C5724	ECEV1CG470GP	CAP,E 47UF-16V
C5725	ECJ1VB1H102K	CAP,C .001UF-K-50V
C5726	ECJ1VB1H102K	CAP,C .001UF-K-50V
C5727	ECJ1VB1H102K	CAP,C .001UF-K-50V
C5728	ECEV1CG470GP	CAP,E 47UF-16V
C5729	ECJ1VB1H102K	CAP,C .001UF-K-50V
C5730	ECJ1VB1H102K	CAP,C .001UF-K-50V
C5731	ECJ1VB1H102K	CAP,C .001UF-K-50V
C5732	ECEV0JG101GP	CAP,E 100UF-6.3V
C5733	ECJ1VB1H102K	CAP,C .001UF-K-50V
C5734	ECJ1VB1H102K	CAP,C .001UF-K-50V
C5735	ECJ1VB1H102K	CAP,C .001UF-K-50V
C5736	ECJ1VB1H102K	CAP,C .001UF-K-50V
C5737	ECJ1VB1H102K	CAP,C .001UF-K-50V
C5738	ECEV0JG101GP	CAP,E 100UF-6.3V
C5739	ECJ1VB1H102K	CAP,C .001UF-K-50V
C5740	ECJ1VB1H102K	CAP,C .001UF-K-50V
C5741	ECJ1VB1H102K	CAP,C .001UF-K-50V
C5742	ECEV0JG101GP	CAP,E 100UF-6.3V
C5743	ECJ1VB1H102K	CAP,C .001UF-K-50V
C5744	ECJ1VB1H102K	CAP,C .001UF-K-50V
C5745	ECJ1VB1H102K	CAP,C .001UF-K-50V
C5746	ECJ1VB1H102K	CAP,C .001UF-K-50V
C5747	ECJ1VB1H102K	CAP,C .001UF-K-50V
C5760	ECUX1H180JCV	CAP,C 18PF-J-50V
C5761	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5762	ECUX1H220JCV	CAP,C 22PF-J-50V
C5763	ECUX1H220JCV	CAP,C 22PF-J-50V
C5764	ECUX1H220JCV	CAP,C 22PF-J-50V
C5765	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5766	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V
C5767	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V
C5770	TACCZ0J335MT	CAP,C 3.3UF-M-6.3V
C5772	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5773	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5774	ECUX1H220JCV	CAP,C 22PF-J-50V
C5776	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5777	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5778	TACCZ0J335MT	CAP,C 3.3UF-M-6.3V
C5779	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5780	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5781	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5782	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5783	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5784	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5785	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5786	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5787	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5788	ECJ1VF1H103Z	CAP,C .010UF-Z-50V
C5789	TACCZ0J335MT	CAP,C 3.3UF-M-6.3V
C5794	TACBA1C104ZT	CAP,C 0.1UF-Z-16V

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
C5795	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5797	ECEV0JG470GP	CAP,E 47UF-6.3V
C5798	ECEV0JG470GP	CAP,E 47UF-6.3V
C5799	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5800	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5801	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5802	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5803	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5804	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5805	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5806	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5807	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5808	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5809	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5810	TACCZ0J335MT	CAP,C 3.3UF-M-6.3V
C5812	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5814	ECEV1CG100GR	CAP,E 10UF-16V
C5815	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5816	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5817	ECEV0JG470GP	CAP,E 47UF-6.3V
C5818	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5819	ECEV1AG100NR	CAP,E 10UF-10V
C5820	ECEV0JG470NP	CAP,E 47UF-6.3V
C5821	ECEV0JG470NP	CAP,E 47UF-6.3V
C5822	ECEV1CG100GR	CAP,E 10UF-16V
C5823	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5824	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5825	ECJ1VB1C104K	CAP,C .10UF-K-16V
C5826	ECJ1VB1H222K	CAP,C .0022UF-K-50V
C5827	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5828	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5829	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5830	ECEV0JG330GP	CAP,E 33UF-6.3V
C5836	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5837	TCUY0J685MBM	CAP,C 6.8UF-M-6.3V
C5838	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5839	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5840	TCUY1C334KBM	CAP,C .33UF-M-16V
C5841	TACCZ0J335MT	CAP,C 3.3UF-M-6.3V
C5842	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5843	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5844	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5845	ECUX1H101JCV	CAP,C 100PF-J-50V
C5846	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5847	ECUX1H101JCV	CAP,C 100PF-J-50V
C5848	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5849	ECUX1H330JCV	CAP,C 33PF-J-50V
C5850	ECUX1H330JCV	CAP,C 33PF-J-50V
C5851	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5852	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5853	TACBA1C104ZT	CAP,C 0.1UF-Z-16V

REF NO.	PART NO.	DESCRIPTION
C5854	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5855	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5856	ECJ1VB1C104K	CAP,C .10UF-K-16V
C5857	ECJ1VB1H222K	CAP,C .0022UF-K-50V
C5859	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5860	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5861	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5862	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5864	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5865	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5866	ECEV1AG100NR	CAP,E 10UF-10V
C5867	ECEV1AG100NR	CAP,E 10UF-10V
C5868	ECEV1AG100NR	CAP,E 10UF-10V
C5869	ECEV1CG100GR	CAP,E 10UF-16V
C5870	ECEV1CG100GR	CAP,E 10UF-16V
C5871	ECEV1CG100GR	CAP,E 10UF-16V
C5872	ECEV1CG100GR	CAP,E 10UF-16V
C5873	ECEV1CG100GR	CAP,E 10UF-16V
C5874	TACCP0J106MT	CAP,C 10UF-M-6.3V
C5875	ECEV1AG100NR	CAP,E 10UF-10V
C5876	ECEV1AG100NR	CAP,E 10UF-10V
C5877	ECEV1AG100NR	CAP,E 10UF-10V
C5878	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5879	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5880	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5881	ECUX1H270JCV	CAP,C 27PF-J-50V
C5882	ECUX1H330JCV	CAP,C 33PF-J-50V
C5883	ECEV0JG101GP	CAP,E 100UF-6.3V
C5884	ECEV0JG101GP	CAP,E 100UF-6.3V
C5885	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5886	ECEV1CG100GR	CAP,E 10UF-16V
C5896	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5897	ECUX1H561KBV	CAP,C 560PF-K-50V
C5898	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5899	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5900	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5901	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5902	ECJ2VB1H333K	CAP,C .033UF-K-50V
C5903	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5904	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5905	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5906	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5910	TCUY1C105KBM	CAP,C 1UF-K-16V
C5911	ECUX1H561JCV	CAP,C 560PF-J-50V
C5912	ECEV1AG100NR	CAP,E 10UF-10V
C5913	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5914	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5918	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5920	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5921	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5922	ECEV1AG100NR	CAP,E 10UF-10V

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
C5923	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5924	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5925	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5926	ECJ1VF1H103Z	CAP,C .010UF-Z-50V
C5927	ECJ3VB1E104K	CAP,C .10UF-K-25V
C5928	ECUX1H821JCX	CAP,C 820PF-J-50V
C5929	TACCZ0J335MT	CAP,C 3.3UF-M-6.3V
C5930	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5931	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5932	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5933	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5934	ECEV0JG470GP	CAP,E 47UF-6.3V
C5935	ECEV0JG470GP	CAP,E 47UF-6.3V
C5936	ECEV0JG470GP	CAP,E 47UF-6.3V
C5937	ECEV0JG470GP	CAP,E 47UF-6.3V
C5938	ECEV0JG101GP	CAP,E 100UF-6.3V
C5939	ECEV0JG101GP	CAP,E 100UF-6.3V
C5940	ECEV0JG101GP	CAP,E 100UF-6.3V
C5941	ECEV0JG101GP	CAP,E 100UF-6.3V
C5942	ECEV0JG470GP	CAP,E 47UF-6.3V
C5943	ECEV0JG470GP	CAP,E 47UF-6.3V
C5944	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C5945	ECUX1H270JCV	CAP,C 27PF-J-50V
C5946	ECUX1H560JCV	CAP,C 56PF-J-50V
C5947	ECUX1H270JCV	CAP,C 27PF-J-50V
C5948	ECUX1H560JCV	CAP,C 56PF-J-50V
C5949	ECUX1H270JCV	CAP,C 27PF-J-50V
C5950	ECUX1H560JCV	CAP,C 56PF-J-50V
C5951	TCUY0J685MBM	CAP,C 6.8UF-M-6.3V
C5952	TACBA1C104ZT	CAP,C 0.1UF-Z-16V
C7001	ECA1HHG2R2B	CAP,E 2.2UF-50V
C7002	ECA1HHG2R2B	CAP,E 2.2UF-50V
C7003	ECA1VHG101B	CAP,E 100UF-35V
C7004	ECA1VHG101B	CAP,E 100UF-35V
C7005	ECA1VHG101B	CAP,E 100UF-35V
C7006	ECA1VHG101B	CAP,E 100UF-35V
C7007	ECUX1H681JCX	CAP,C 680PF-J-50V
C7009	ECUX1H220JCX	CAP,C 22PF-J-50V
C7010	ECUX1H220JCX	CAP,C 22PF-J-50V
C7011	ECUX1H220JCX	CAP,C 22PF-J-50V
C7012	ECUX1H220JCX	CAP,C 22PF-J-50V
C7013	ECUX1H220JCX	CAP,C 22PF-J-50V
C7014	ECUX1H220JCX	CAP,C 22PF-J-50V
C7015	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7016	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7017	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7018	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7019	ECKF1H102KB	CAP,C .001UF-K-50V
C7020	ECKF1H102KB	CAP,C .001UF-K-50V
C7021	ECKF1H102KB	CAP,C .001UF-K-50V
C7022	ECKF1H102KB	CAP,C .001UF-K-50V

REF NO.	PART NO.	DESCRIPTION
C7023	ECKF1H102KB	CAP,C .001UF-K-50V
C7024	ECKF1H102KB	CAP,C .001UF-K-50V
C7025	ECUX1H681JCX	CAP,C 680PF-J-50V
C7026	ECUX1H681JCX	CAP,C 680PF-J-50V
C7027	ECUX1H681JCX	CAP,C 680PF-J-50V
C7030	ECUX1H681JCX	CAP,C 680PF-J-50V
C7031	ECUX1H681JCX	CAP,C 680PF-J-50V
C7052	ECA1VHG470B	CAP,E 47UF-35V
C7053	ECEA1CN101U	CAP,E 100UF-16V
C7101	TCUY1C105KBM	CAP,C 1UF-K-16V
C7102	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7103	ECUX1H332ZFX	CAP,C .0033UF-Z-50V
C7104	ECA1CM101	CAP,E 100UF/16V
C7105	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7106	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7107	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7108	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7109	ECA1CM101	CAP,E 100UF/16V
C7110	ECA1CM101	CAP,E 100UF/16V
C7112	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7113	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7114	ECA1CM101	CAP,E 100UF/16V
C7115	ECUX1H102JCX	CAP,C .001UF-J-50V
C7116	ECUX1H102JCX	CAP,C .001UF-J-50V
C7117	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7118	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7120	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7122	ECUX1H101JCX	CAP,C 100PF-J-50V
C7123	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7124	ECUX1H101JCX	CAP,C 100PF-J-50V
C7125	ECJ2VF1H104Z	CAP,C .1UF-Z-50V
C7126	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7127	ECJ2VF1H104Z	CAP,C .1UF-Z-50V
C7128	ECA1CM101	CAP,E 100UF/16V
C7130	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7131	ECA1CM101	CAP,E 100UF/16V
C7132	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7133	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7134	ECA1CM101	CAP,E 100UF/16V
C7136	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7137	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7139	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7140	ECA1CM101	CAP,E 100UF/16V
C7141	ECA1CM101	CAP,E 100UF/16V
C7142	ECUX1H120JCX	CAP,C 12PF-J-50V
C7143	ECUX1H120JCX	CAP,C 12PF-J-50V
C7144	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7145	ECUX1H560JCX	CAP,C 56PF-J-50V
C7146	ECA1CM101	CAP,E 100UF/16V
C7147	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7148	ECUX1H471JCX	CAP,C 470PF-J-50V

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
C7149	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7150	ECA1CM101	CAP,E 100UF/16V
C7151	ECA1CM101	CAP,E 100UF/16V
C7152	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7153	ECA1CM101	CAP,E 100UF/16V
C7154	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7155	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7156	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7157	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7158	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7159	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7160	ECA1CM101	CAP,E 100UF/16V
C7161	ECA1CM101	CAP,E 100UF/16V
C7162	ECA1CM101	CAP,E 100UF/16V
C7163	ECA1CM101	CAP,E 100UF/16V
C7164	ECA1CM101	CAP,E 100UF/16V
C7165	ECA1CM101	CAP,E 100UF/16V
C7166	ECA1CM101	CAP,E 100UF/16V
C7168	ECA1CM101	CAP,E 100UF/16V
C7169	ECUX1H471JCX	CAP,C 470PF-J-50V
C7170	ECUX1H471JCX	CAP,C 470PF-J-50V
C7171	ECUX1H471JCX	CAP,C 470PF-J-50V
C7172	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7173	ECUX1H471JCX	CAP,C 470PF-J-50V
C7174	ECUX1H471JCX	CAP,C 470PF-J-50V
C7175	ECUX1H471JCX	CAP,C 470PF-J-50V
C7176	ECUX1H471JCX	CAP,C 470PF-J-50V
C7177	ECUX1H471JCX	CAP,C 470PF-J-50V
C7178	ECUX1H471JCX	CAP,C 470PF-J-50V
C7179	ECUX1H471JCX	CAP,C 470PF-J-50V
C7180	ECUX1H471JCX	CAP,C 470PF-J-50V
C7181	ECUX1H471JCX	CAP,C 470PF-J-50V
C7182	ECUX1H821JCX	CAP,C 820PF-J-50V
C7183	ECA1CM101	CAP,E 100UF/16V
C7184	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7185	ECUX1H821JCX	CAP,C 820PF-J-50V
C7186	ECUX1H821JCX	CAP,C 820PF-J-50V
C7187	ECUX1H821JCX	CAP,C 820PF-J-50V
C7188	ECUX1H821JCX	CAP,C 820PF-J-50V
C7189	ECUX1H821JCX	CAP,C 820PF-J-50V
C7401	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7402	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7403	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7404	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7405	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7406	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7407	ECUX1H101JCX	CAP,C 100PF-J-50V
C7411	ECUX1H101JCX	CAP,C 100PF-J-50V
C7414	ECA1CM101	CAP,E 100UF/16V
C7415	ECA1CM101	CAP,E 100UF/16V
C7416	ECA1CM101	CAP,E 100UF/16V
C7417	ECA1CM101	CAP,E 100UF/16V
C7418	ECA1CM101	CAP,E 100UF/16V
C7419	ECA1CM101	CAP,E 100UF/16V
C7420	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7421	ECA1CM101	CAP,E 100UF/16V
C7424	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7434	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7435	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7436	ECA1CM220	CAP,E 22UF/16V
C7437	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7453	ECUX1H101JCX	CAP,C 100PF-J-50V
C7801	TCUY1C105ZFN	CAP,C 1UF-Z-16V
C7819	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7908	ECA1CM101	CAP,E 100UF/16V
C7909	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7930	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C7931	ECA1CM471	CAP,E 470UF/16V
C7952	ECJ2VF1C105Z	CAP,C 1.0UF-Z-16V
C8637	ECUX1H472KBX	CAP,C .0047UF-K-50V
C8638	ECUX1H271JCX	CAP,C 270PF-J-50V
C8663	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C8664	ECA1VM470	CAP,E 47UF/35V
C8692	TCUY1C105ZFN	CAP,C 1UF-Z-16V
C8693	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C8694	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C8697	ECUX1H470JCX	CAP,C 47PF-J-50V
C8699	ECUX1H470JCX	CAP,C 47PF-J-50V
C8700	ECUX1H470JCX	CAP,C 47PF-J-50V
C8705	ECJ2VB1C104K	CAP,C .1UF-I-16V
C8712	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C8713	ECA1VM470	CAP,E 47UF/35V
C8714	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C8715	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C8716	ECA1CM101	CAP,E 100UF/16V
C8718	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C8719	ECA1CM101	CAP,E 100UF/16V
C8720	ECA1VM470	CAP,E 47UF/35V
C8721	ECJ2VF1H103Z	CAP,C .01UF-Z-50V
C8722	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C8724	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C8726	ECJ2VB1E473K	CAP,C .047UF-K-25V
C8728	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C8729	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
C8730	ECJ2VF1C104Z	CAP,C .1UF-Z-16V
JS5205	ECUX1H100DCX	CAP,C 10PF-D-50V
	DIODES	
D004	MA4330H	DIODE
D005	MA4056M	DIODE
D006	MA4051L	DIODE, ZENER
D007	MA4051L	DIODE, ZENER
D353	MA165	DIODE

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
D354	MA165	DIODE
D357	MA165	DIODE
D360	MA188	DIODE
D361	MA188	DIODE
D362	MA188	DIODE
D363	MA188	DIODE
D366	AM01ZV0	DIODE
D367	MA188	DIODE
D368	MA188	DIODE
D369	MA188	DIODE
D370	MA188	DIODE
D373	MA165	DIODE
D374	MA165	DIODE
D377	MA165	DIODE
D387	MA188	DIODE
D388	MA188	DIODE
D389	MA188	DIODE
D390	MA188	DIODE
D393	MA165	DIODE
D394	MA165	DIODE
D397	MA165	DIODE
D421	MA704A	DIODE
D451	**AU02**	**DIODE**
D452	ERA15-01	DIODE
D473	MA4140M	DIODE
D485	MA165	DIODE
D486	MA165	DIODE
D501	MA165	DIODE
D502	EU02V0	DIODE
D503	EU02V0	DIODE
D504	EU02V0	DIODE
D521	MA152K	DIODE
D522	MA704A	DIODE
D524	MA704A	DIODE
D525	MA3062M	DIODE
D526	MA3062M	DIODE
D551	**FMV-3GULF730**	**DIODE**
D553	**MA4270M**	**DIODE**
D555	**MA4051L**	**DIODE, ZENER**
D561	AU02	DIODE
D562	MTZJT-7739D	DIODE, ZENER
D581	MA165	DIODE
D582	MA4068M	DIODE, ZENER
D583	MA165	DIODE
D650	MA4110M	DIODE, ZENER
D651	MA4110M	DIODE, ZENER
D652	MA4110M	DIODE, ZENER
D659	MA4110M	DIODE, ZENER
D660	MA4110M	DIODE, ZENER
D661	MA4051M	DIODE
D662	MA4110M	DIODE, ZENER

REF NO.	PART NO.	DESCRIPTION
D663	MA4110M	DIODE, ZENER
D664	MA4051M	DIODE
D751	MA29-A	DIODE
D752	MA29-A	DIODE
D753	AU02	DIODE
D754	MA165	DIODE
D802	**RBV-408**	**BRIDGE, RECTIFIER**
D804	MA165	DIODE
D816	MA700	DIODE
D817	AU01Z	DIODE
D818	MA4220L	DIODE, ZENER
D819	**TMPG10G3**	**DIODE**
D821	MA165	DIODE
D822	ERA22-02	DIODE
D831	**RU30ALFS1**	**DIODE, RECTIFIER**
D832	**RU3YX-M**	**DIODE**
D833	**FML12S**	**DIODE**
D834	**RL3ZLFS1**	**DIODE**
D835	**RL3ZLFS1**	**DIODE**
D836	**RL4ZLF-L1**	**DIODE**
D837	MA165	DIODE
D838	MA4047L	DIODE, ZENER
D839	MA4033M	DIODE, ZENER
D840	MA167	DIODE
D841	MA165	DIODE
D842	MA4082M	DIODE
D843	MA165	DIODE
D844	MA4020	DIODE
D845	**ERA18-04**	**DIODE**
D847	MA165	DIODE
D848	MA165	DIODE
D849	MA165	DIODE
D851	RK34LFC4	DIODE
D853	MA4100H	DIODE, ZENER
D854	MA165	DIODE
D855	MA165	DIODE
D856	MA165	DIODE
D857	ERA22-04	DIODE, ZENER
D875	MA152K	DIODE
D953	TVSSR2KNV	DIODE, ZENER
D962	MA188	DIODE
D973	TVSSR2KNV	DIODE, ZENER
D974	MA188	DIODE
D983	TVSSR2KNV	DIODE, ZENER
D984	MA188	DIODE
D1501	MA165	DIODE
D1502	**RP1H**	**DIODE**
D1503	MA165	DIODE
D1504	MA165	DIODE
D1505	MA29-B	DIODE
D1581	**MA4330M**	**DIODE**

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
D1582	**MA4330M**	**DIODE**
D1583	**MA4062L**	**DIODE**
D1584	**AS01**	**DIODE**
D2102	MA4330H	DIODE
D2303	MA3330M	DIODE
D2304	MA3330M	DIODE
D2305	MA152K	DIODE
D2306	MA152K	DIODE
D2307	MA152K	DIODE
D2308	MA3330M	DIODE
D2309	MA3330M	DIODE
D2310	MA3330M	DIODE
D2311	MA3330M	DIODE
D2312	MA3330M	DIODE
D2313	MA3330M	DIODE
D2316	MA3110M	DIODE, ZENER
D2317	MA3110M	DIODE, ZENER
D2318	MA3110M	DIODE, ZENER
D2319	MA3110M	DIODE, ZENER
D2320	MA3110M	DIODE, ZENER
D2321	MA3110M	DIODE, ZENER
D2322	MA3110M	DIODE, ZENER
D2323	MA3110M	DIODE, ZENER
D2352	MA152K	DIODE
D2353	MA152K	DIODE
D2601	MA152K	DIODE
D2602	MA152WK	DIODE
D2606	MA152K	DIODE
D2609	MA152WK	DIODE
D2801	**ERZC10VK361G**	**VARISTOR**
D2802	ERA15-01	DIODE
D2803	ERA15-01	DIODE
D2804	ERA15-01	DIODE
D2805	ERA15-01	DIODE
D2900	MA4051L	DIODE, ZENER
D2901	MA165	DIODE
D2902	MA165	DIODE
D2903	MA152K	DIODE
D2904	MA4051L	DIODE, ZENER
D3001	MA3110M	DIODE, ZENER
D3002	MA3075M	DIODE
D3004	MA3075M	DIODE
D3007	MA3075M	DIODE
D3009	MA3075M	DIODE
D3011	MA3110M	DIODE, ZENER
D3012	MA3075M	DIODE
D3014	MA3075M	DIODE
D3018	MA3110M	DIODE, ZENER
D3023	MA3075M	DIODE
D3024	MA3075M	DIODE
D3037	MA3075M	DIODE

REF NO.	PART NO.	DESCRIPTION
D3039	MA3075M	DIODE
D3051	MA3110M	DIODE, ZENER
D3071	MA3110M	DIODE, ZENER
D3072	MA3110M	DIODE, ZENER
D3073	MA3110M	DIODE, ZENER
D3074	MA3110M	DIODE, ZENER
D3075	MA3110M	DIODE, ZENER
D3078	MA3110M	DIODE, ZENER
D3079	MA3110M	DIODE, ZENER
D3080	MA3110M	DIODE, ZENER
D3081	MA3110M	DIODE, ZENER
D3082	MA3110M	DIODE, ZENER
D3102	MA3110M	DIODE, ZENER
D3103	MA3110M	DIODE, ZENER
D3104	MA3110M	DIODE, ZENER
D3105	MA3110M	DIODE, ZENER
D3106	MA3110M	DIODE, ZENER
D3151	MA152K	DIODE
D3152	MA3110M	DIODE, ZENER
D3153	MA3110M	DIODE, ZENER
D3154	MA3110M	DIODE, ZENER
D3155	MA3110M	DIODE, ZENER
D3156	MA3110M	DIODE, ZENER
D3157	MA3110M	DIODE, ZENER
D3158	MA3110M	DIODE, ZENER
D3351	1SS254T-77	DIODE
D3352	1SS254T-77	DIODE
D3361	1SS254T-77	DIODE
D3362	1SS254T-77	DIODE
D3371	1SS254T-77	DIODE
D3372	1SS254T-77	DIODE
D5707	1SS355TE-17	DIODE
D5708	1SS355TE-17	DIODE
	FUSES	
F2801	**0BA1C63NU100**	**FUSE (6.3A-125V)**
	INTEGRATED CIRCUITS	
IC001	**MN102L35GTK1**	**INT CKT**
IC002	24LC08BIP	INT CKT
IC005	AN78M05-LB	INT CKT (+5V AVR)
IC006	MN1280-R	INT CKT
IC101	AN5170K	INT CKT
IC411	AN5491K	INT CKT
IC451	**LA7845N**	**INT CKT**
IC471	TA8859P	INT CKT
IC521	UPC1093J-T	INT CKT
IC751	BA15218N	INT CKT
IC752	NJM2903D	INT CKT4
IC753	NJM2903D	INT CKT
IC801	**AN8026**	**INT CKT**
IC802	**SE139NLF4**	**ERROR AMP**
IC811	**TLP621GR**	**PHOTO COUPLER**

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
IC831	AN7812	INT CKT
IC841	**SI-8090S**	**INT CKT**
IC871	AN7809-	INT CKT
IC872	SI-3050CA	INT CKT
IC873	AN79M12	INT CKT
IC874	AN78L05	INT CKT
IC881	PQ3RD13B	INT CKT
IC882	PQ05RD1B	INT CKT
IC1501	BA15218F-E2	INT CKT
IC2101	AN5170K	INT CKT
IC2201	**AN5819K**	**INT CKT**
IC2301	TDA7480	AUDIO AMP
IC2302	TDA7480	AUDIO AMP
IC2401	AN7396K	AUDIO CONTROL IC
IC2402	BA15218F-E2	INT CKT
IC2501	AN5395FBP	INT CKT
IC2601	AN5393FBQ	INT CKT
IC2701	CXA1315M-T4	INT CKT
IC2702	CXA1315M-T4	INT CKT
IC3001	CXA2079Q	AV SW
IC3152	CXA1229AM-T6	INT CKT
IC3153	M52347FP-E2	INT CKT
IC3155	TC74HC4066AL	INT CKT
IC3156	BU4551BF-E2	INT CKT
IC3157	M52055FP-E2	INT CKT
IC3158	M52055FP-E2	INT CKT
IC5201	AN78L09M-E1	INT CKT
IC5203	CXA2019Q	INT CKT
IC5204	TC74HC4066AL	INT CKT
IC5206	AN77L035M-E1	INT CKT
IC5207	MM1065ZMR	INT CKT
IC5208	UPD64081BGF	INT CKT
IC5209	MNV4265DT6	INT CKT
IC5211	PST9128NR	INT CKT
IC5212	TC7S66FEL	INT CKT
IC5550	BU6401KV-HC	INT CKT
IC5551	PST9142NR	INT CKT
IC5601	PST9128NR	INT CKT
IC5602	MN8412B	INT CKT
IC5603	MM1065ZMR	INT CKT
IC5604	MM1065ZMR	INT CKT
IC5605	AN3917S-E1	INT CKT
IC5606	TLC2932IPWL	INT CKT
IC5607	JLC1562BFEL	INT CKT
IC5608	TC74LCX244FL	INT CKT
IC5609	TC74LCX244FL	INT CKT
IC5610	TC7WU04FEL	INT CKT
IC5611	TC7SH00FEL	INT CKT
IC5612	PST9142NR	INT CKT
IC5701	TC74HC4066AL	INT CKT
IC5703	TC74HC4066AL	INT CKT

REF NO.	PART NO.	DESCRIPTION
IC5704	TC7WH74FUEL	INT CKT
IC5705	MM1065ZMR	INT CKT
IC5706	MB87F1720	INT CKT
IC5707	M52055FP-E2	INT CKT
IC5708	TLC2932IPWL	INT CKT
IC5709	TC7S66FEL	INT CKT
IC5710	MM1065ZMR	INT CKT
IC5711	AN77L05M-E1	INT CKT
IC5712	MN8271AT	INT CKT
IC5713	TVRC084	INT CKT
IC5714	M52347FP-E2	INT CKT
IC5715	TC74HCU04AFL	INT CKT
IC5717	D4811650GF10	INT CKT
IC5720	M52055FP-E2	INT CKT
IC5724	TC74VHC157F	INT CKT
IC5725	TC74VHC157F	INT CKT
IC5726	74LVC74APWL	INT CKT
IC5727	TC74LCX574FL	INT CKT
IC5728	TC74HC221AF	INT CKT
IC5729	TC7WH04FUEL	INT CKT
IC5730	PST9125NR	INT CKT
IC5731	TC7W66FUEL	INT CKT
IC5733	TC7W66FUEL	INT CKT
IC5734	PST9128NR	INT CKT
IC5735	TC7S66FEL	INT CKT
IC5736	TLC2932IPWL	INT CKT
IC5737	AN78L05M-E1	INT CKT
IC5738	TC7WT74FUEL	INT CKT
IC5739	TC7SH86FEL	INT CKT
IC5740	TC7WH241FUEL	INT CKT
IC5741	TC7WT74FUEL	INT CKT
IC7001	STK392-110	INT CKT
IC7002	STK392-110	INT CKT
IC7101	24LC65TI/SM	EEPROM
IC7102	SN74HC74NSTL	INT CKT
IC7103	JLC1562BFEL	INT CKT
IC7104	TLC2932IPWL	INT CKT
IC7105	MC33064D-5R2	INT CKT
IC7106	SC430409CFC	SUB CPU
IC7107	11350-501	INT CKT
IC7108	TVSA0342	INT CKT
IC7109	M62354FP-E2	INT CKT
IC7110	TVSA0036	INT CKT
IC7111	LC78815M-TLM	INT CKT
IC7112	LC78815M-TLM	INT CKT
IC7113	LC78815M-TLM	INT CKT
IC7116	UPC4570G2-E2	INT CKT
IC7117	UPC4570G2-E2	INT CKT
IC7118	UPC4570G2-E2	INT CKT
IC7401	LC78815M-TLM	INT CKT
IC7402	LC78815M-TLM	INT CKT

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
IC7403	LC78815M-TLM	INT CKT
IC7404	TC74HC4053AF	INT CKT
IC7409	TVSA0342	INT CKT
IC7415	SN74HC00NSL	INT CKT
IC8613	PST9128NR	INT CKT
IC8615	TC7WU04FEL	INT CKT
IC8616	AN77L035M-E1	INT CKT
IC8617	TLC2932IPWL	INT CKT
IC8618	F432116PH	INT CKT
IC8619	TC74HC74AL	INT CKT
IC8620	TC7SH00FEL	INT CKT
IC8621	TC7SH00FEL	INT CKT
IC8622	TC7SH04FEL	INT CKT
	INTEGRATED CIRCUITS	
LC2801	EXCEMT101BTS	L-C NETWORK
LC2802	EXCEMT101BTS	L-C NETWORK
LC2803	EXCEMT101BTS	L-C NETWORK
LC2804	EXCEMT101BTS	L-C NETWORK
LC5616	ELKE103FA	NOISE FILTER
LC5617	ELKE103FA	NOISE FILTER
LC5618	ELKE103FA	NOISE FILTER
LC5619	ELKE103FA	NOISE FILTER
LC5620	ELKE103FA	NOISE FILTER
LC5621	ELKE103FA	NOISE FILTER
LC5622	ELKE103FA	NOISE FILTER
LC5623	ELKE103FA	NOISE FILTER
LC5626	TAX10088	FILTER
LC5628	TAX10088	FILTER
LC5631	TAX10069	FILTER
LC5634	TAX10069	FILTER
LC5635	TAX10069	FILTER
LC5637	TAX10069	FILTER
LC5639	TAX10069	FILTER
LC5640	TAX10088	FILTER
LC5641	TAX10088	FILTER
LC5642	TAX10081	FILTER
LC6502	TAX10073	FILTER
LC6503	TAX10073	FILTER
LC6504	TAX10073	FILTER
LC6505	TAX10073	FILTER
LC6506	TAX10073	FILTER
LC6507	TAX10073	FILTER
LC6508	TAX10073	FILTER
LC6510	TAX10073	FILTER
LC6520	TAX10073	FILTER
LC6521	TAX10073	FILTER
LC6522	TAX10073	FILTER
LC6526	TAX10073	FILTER
LC6527	TAX10073	FILTER
LC7101	TAX10094	FILTER
LC7102	TAX10094	FILTER

REF NO.	PART NO.	DESCRIPTION
LC7103	EXCEMT222DTM	EMI FILTER
LC7104	EXCEMT222DTM	EMI FILTER
LC7105	EXCEMT222DTM	EMI FILTER
LC7106	EXCEMT222DTM	EMI FILTER
LC7401	EXCEMT101BTS	L-C NETWORK
LC7402	EXCEMT471BTS	EMI FILTER
LC8032	TAX10073	FILTER
LC8033	TAX10073	FILTER
LC8051	TAX10073	FILTER
LC8054	TAX10073	FILTER
LC8056	TAX10073	FILTER
LC8057	TAX10073	FILTER
LC8058	TAX10073	FILTER
LC8059	TAX10073	FILTER
L001	TLTACT390K	COIL, PEAKING 39UH
L002	TSKA074	FERRITE BEAD
L010	EXCELSA35T	FERRITE BEAD
L012	TLUABTA100K	COIL, PEAKING 10UH
L013	TLUABTA100K	COIL, PEAKING 10UH
L015	TLUABTA100K	COIL, PEAKING 10UH
L016	TLUABTA100K	COIL, PEAKING 10UH
L017	EXCELSA35T	FERRITE BEAD
L026	EXCELSA35T	FERRITE BEAD
L103	ELESN150JA	COIL, PEAKING 15UH
L105	EIV7EN053B	COIL, VCO
L118	ELESN150JA	COIL, PEAKING 15UH
L135	ELESN560JA	COIL, PEAKING 56UH
L351	ELEBD101KA	COIL, PEAKING 100UH
L352	ELESN100JA	COIL, PEAKING 10UH
L353	ELESN4R7JA	COIL, PEAKING 4.7UH
L354	ELESN6R8JA	COIL, PEAKING 6.8UH
L371	ELEBD101KA	COIL, PEAKING 100UH
L372	ELESN100JA	COIL, PEAKING 10UH
L373	ELESN4R7KA	COIL, PEAKING 4.7UH
L374	ELESN6R8JA	COIL, PEAKING 6.8UH
L391	ELEBD101KA	COIL, PEAKING 100UH
L392	ELESN100JA	COIL, PEAKING 10UH
L393	ELESN4R7JA	COIL, PEAKING 4.7UH
L394	ELESN6R8JA	COIL, PEAKING 6.8UH
L471	ELESN470KA	COIL, PEAKING 47UH
L553	EXCELSA35B	FERRITE BEAD
L555	ELH5L718	COIL
L751	ELC18B151E	FILTER
L752	ELESN100KA	COIL, PEAKING 10UH
L753	ELC18B272L	FILTER
L754	EXCELSA35T	FERRITE BEAD
L755	TSKA064-1	FERRITE BEAD
L756	TSKA064-1	FERRITE BEAD
L805	EXCELSA35B	FERRITE BEAD
L806	EXCELSA35B	FERRITE BEAD
L808	EXCELDR35	FERRITE BEAD

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
L810	EXCELSA35B	FERRITE BEAD
L811	EXCELSA35B	FERRITE BEAD
L812	EXCELSA35B	FERRITE BEAD
L831	EXCELSA35B	FERRITE BEAD
L832	EXCELSA39E	FERRITE BEAD
L833	TLP15103S	COIL, CHOKE
L834	EXCELSA35T	FERRITE BEAD
L835	EXCELSA35T	FERRITE BEAD
L836	EXCELSA35T	FERRITE BEAD
L837	EXCELSA35T	FERRITE BEAD
L838	EXCELSA35T	FERRITE BEAD
L839	EXCELSA35T	FERRITE BEAD
L841	ELEIN220KA	FILTER CHOKE
L842	ELEIN220KA	FILTER CHOKE
L843	EXCELSA35T	FERRITE BEAD
L851	TLPF095	COIL
L852	TALL08T470KA	LINE FILTER
L855	TALL08T680KA	LINE FILTER
L871	TLTACT1R0K	COIL, PEAKING 1UH
L872	ELESN470JA	COIL, PEAKING 47UH
L904	TLUABTA560K	COIL, PEAKING 56UH
L951	EXCELSA35T	FERRITE BEAD
L953	EXCELSA35T	FERRITE BEAD
L954	EXCELSA35T	FERRITE BEAD
L956	EXCELSA35T	FERRITE BEAD
L973	EXCELSA35T	FERRITE BEAD
L974	EXCELSA35T	FERRITE BEAD
L975	EXCELSA35T	FERRITE BEAD
L983	EXCELSA35T	FERRITE BEAD
L984	EXCELSA35T	FERRITE BEAD
L985	EXCELSA35T	FERRITE BEAD
L2102	TLTACT100K	COIL, PEAKING 10UH
L2103	TLTACT150K	COIL, PEAKING 15UH
L2104	TLTACT330K	COIL, PEAKING 33UH
L2106	TLTACT560K	COIL, PEAKING 56UH
L2109	EIV7EN053B	COIL, VCO
L2112	TSKA074	FERRITE BEAD
L2201	**ELESN102JA**	**COIL, PEAKING 1000UH**
L2202	**ELESN471JA**	**COIL, PEAKING 470UH**
L2301	ELC10E680	FILTER
L2302	ELC10E680	FILTER
L2303	EXCELDR35	FERRITE BEAD
L2304	EXCELDR35	FERRITE BEAD
L2502	ELESN820KA	COIL, PEAKING 82UH
L2503	ELESN2R7KA	COIL
L2504	ELB4K149B	FILTER, LOW PASS
L2505	TSKA064-1	FERRITE BEAD
L2601	TSKA064-1	FERRITE BEAD
L2603	ELESN100JA	COIL, PEAKING 10UH
L2604	ELJPA100KF	CHIP INDUCTOR, 10UH
L2605	TSKA064-1	FERRITE BEAD

REF NO.	PART NO.	DESCRIPTION
L2607	EXCELDR25	FERRITE BEAD
L2608	ELJPA100KF	CHIP INDUCTOR, 10UH
L2665	TSKA064-1	FERRITE BEAD
L2801	**ELF18D850B**	**LINE FILTER**
L2802	**ELF18D650M**	**CHOKE, AC LINE**
L2853	ELESN330JA	COIL, PEAKING 33UH
L2854	ELESN330JA	COIL, PEAKING 33UH
L2855	ELESN330JA	COIL, PEAKING 33UH
L2856	ELESN330JA	COIL, PEAKING 33UH
L2857	TLTACT330K	COIL, PEAKING 33UH
L2858	TLPF059	LINE FILTER
L2859	TLPF059	LINE FILTER
L2860	TLPF059	LINE FILTER
L2861	ELESN330JA	COIL, PEAKING 33UH
L2862	TLTACT100J	COIL, PEAKING 10UH
L2863	TLTACT100K	COIL, PEAKING 10UH
L2864	ELESN100KA	COIL, PEAKING 10UH
L2868	ELESN330JA	COIL, PEAKING 33UH
L3006	TLTACT100J	COIL, PEAKING 10UH
L3155	ELB4B569	DELAY LINE
L3156	ELB4C568	DELAY LINE
L3157	TLTAZ100K	COIL, PEAKING 10UH
L3158	TLTAZ100K	COIL, PEAKING 10UH
L3159	TLTAZ100K	COIL, PEAKING 10UH
L5211	ELB4B560	DELAY LINE
L5212	ELJPA100KF	CHIP INDUCTOR, 10UH
L5213	ELJPA100KF	CHIP INDUCTOR, 10UH
L5216	TLTAPT180J	COIL, PEAKING 18UH
L5218	TLTAZ100K	COIL, PEAKING 10UH
L5219	TLTAZ100K	COIL, PEAKING 10UH
L5220	ELB4B566	DELAY LINE
L5222	TLTAPT390J	COIL, PEAKING 39UH
L5224	TLTAZ100K	COIL, PEAKING 10UH
L5227	TLTAZ100K	COIL, PEAKING 10UH
L5236	TLTAZ100K	COIL, PEAKING 10UH
L5240	TLTAPT4R7J	COIL
L5241	EXCELDR25	FERRITE BEAD
L5550	ELJPA100KF	COIL00K
L5601	ELJPA100KF	CHIP INDUCTOR, 10UH
L5602	ELJPA100KF	CHIP INDUCTOR, 10UH
L5603	ELJPA100KF	CHIP INDUCTOR, 10UH
L5604	ELJPA100KF	CHIP INDUCTOR, 10UH
L5605	ELJPA100KF	CHIP INDUCTOR, 10UH
L5606	TLTAPT100J	COIL
L5608	TLTAPTR39J	COIL
L5701	ELB4B572	12MHZ LPF
L5702	ELB4B572	12MHZ LPF
L5703	ELB4B572	12MHZ LPF
L5704	ELJPA100KF	CHIP INDUCTOR, 10UH
L5705	ELJPA100KF	CHIP INDUCTOR, 10UH
L5706	ELJPA100KF	CHIP INDUCTOR, 10UH

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
L5708	ELJPA100KF	CHIP INDUCTOR, 10UH
L5709	ELJPA100KF	CHIP INDUCTOR, 10UH
L5710	ELJPA100KF	CHIP INDUCTOR, 10UH
L5711	ELJPA100KF	CHIP INDUCTOR, 10UH
L5712	ELJFA1R8KF	COIL
L5713	ELJFA1R8KF	COIL
L5714	ELJFA1R8KF	COIL
L7001	EXCELSA39	FERRITE BEAD
L7002	EXCELSA39	FERRITE BEAD
L7003	EXCELSA39	FERRITE BEAD
L7004	EXCELSA39	FERRITE BEAD
L7005	EXCELSA39	FERRITE BEAD
L7006	EXCELSA39	FERRITE BEAD
L7106	TLTACT180J	COIL, PEAKING 18UH
L8614	TLTAZ100K	COIL, PEAKING 10UH
L8616	TLTAZ100K	COIL, PEAKING 10UH
L8617	ELJPA470KF	CHIP INDUCTOR 47UH
L8618	ELJPA470KF	CHIP INDUCTOR 47UH
	TRANSISTORS	
Q014	2SD601ARTX	TRANSISTOR
Q016	2SD601ARTX	TRANSISTOR
Q102	2SD601ARTX	TRANSISTOR
Q353	2SC3942LB	TRANSISTOR
Q354	2SC3790ERA	TRANSISTOR
Q355	2SA1480E-RA	TRANSISTOR
Q356	2SA1480E-RA	TRANSISTOR
Q373	2SC3942LB	TRANSISTOR
Q374	2SC3790ERA	TRANSISTOR
Q375	2SA1480E-RA	TRANSISTOR
Q376	2SA1480E-RA	TRANSISTOR
Q393	2SC3942LB	TRANSISTOR
Q394	2SC3790ERA	TRANSISTOR
Q395	2SA1480E-RA	TRANSISTOR
Q396	2SA1480E-RA	TRANSISTOR
Q471	2SD601ARTX	TRANSISTOR
Q472	2SD601ARTX	TRANSISTOR
Q482	2SC1685QRS	TRANSISTOR
Q502	2SC2925STA	TRANSISTOR
Q552	**2SC5144LB228**	**TRANSISTOR**
Q581	2SC1685QRS	TRANSISTOR
Q751	2SC1685RSTA	TRANSISTOR
Q752	2SK2538000LB	TRANSISTOR
Q753	2SC1473ARTA	TRANSISTOR
Q801	**FS18SM-10-AB**	**TRANSISTOR**
Q802	2SC1685QRS	TRANSISTOR
Q803	2SA564AQRSTA	TRANSISTOR
Q810	2SC1685QRS	TRANSISTOR
Q831	2SA19610QAHW	TRANSISTOR
Q832	2SA564AQRSTA	TRANSISTOR
Q833	2SC1473RTA	TRANSISTOR
Q860	2SA564AQRSTA	TRANSISTOR

REF NO.	PART NO.	DESCRIPTION
Q873	2SD601ARTX	TRANSISTOR
Q874	2SB709ARTX	TRANSISTOR
Q902	2SC2458T4M1	TRANSISTOR
Q903	2SC2458T4M1	TRANSISTOR
Q908	2SC1318ATA	TRANSISTOR
Q951	2SA720A	TRANSISTOR
Q952	2SC1318ATA	TRANSISTOR
Q953	2SC1318ATA	TRANSISTOR
Q954	2SA720A	TRANSISTOR
Q955	2SA1535ALB	TRANSISTOR
Q956	2SC3944ALB	TRANSISTOR
Q957	2SA1535ALB	TRANSISTOR
Q958	2SC3944ALB	TRANSISTOR
Q959	2SA1535ALB	TRANSISTOR
Q960	2SC3944ALB	TRANSISTOR
Q961	2SA720ARTA	TRANSISTOR
Q962	2SC1318ARTA	TRANSISTOR
Q963	2SA720ARTA	TRANSISTOR
Q964	2SC1318ARTA	TRANSISTOR
Q965	2SA720ARTA	TRANSISTOR
Q966	2SC1318ARTA	TRANSISTOR
Q1306	2SD601ARTX	TRANSISTOR
Q1307	2SD601ARTX	TRANSISTOR
Q1328	2SB709ARTX	TRANSISTOR
Q1330	2SB709ARTX	TRANSISTOR
Q1501	2SC1473RTA	TRANSISTOR
Q1502	2SC1473RTA	TRANSISTOR
Q1503	2SA564AQRSTA	TRANSISTOR
Q1504	2SC4635-YB7	TRANSISTOR
Q1505	2SC1685QRS	TRANSISTOR
Q1507	2SC1573RTA	TRANSISTOR
Q1581	2SA564AQRSTA	TRANSISTOR
Q1582	2SC1685QRS	TRANSISTOR
Q1903	2SD601ARTX	TRANSISTOR
Q1904	2SD601ARTX	TRANSISTOR
Q1905	2SD601ARTX	TRANSISTOR
Q1906	2SD601ARTX	TRANSISTOR
Q1907	2SD601ARTX	TRANSISTOR
Q1908	2SD601ARTX	TRANSISTOR
Q1909	2SD601ARTX	TRANSISTOR
Q1910	2SD601ARTX	TRANSISTOR
Q2101	2SD601ARTX	TRANSISTOR
Q2301	2SD601ARTX	TRANSISTOR
Q2302	2SD601ARTX	TRANSISTOR
Q2303	2SD601ARTX	TRANSISTOR
Q2351	2SB709ARTX	TRANSISTOR
Q2352	2SD601ARTX	TRANSISTOR
Q2353	2SB709ARTX	TRANSISTOR
Q2354	2SD601ARTX	TRANSISTOR
Q2355	2SB709ARTX	TRANSISTOR
Q2356	2SB709ARTX	TRANSISTOR

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
Q2357	2SD601ARTX	TRANSISTOR
Q2401	2SD601ARTX	TRANSISTOR
Q2402	2SD601ARTX	TRANSISTOR
Q2403	2SD601ARTX	TRANSISTOR
Q2404	2SD601ARTX	TRANSISTOR
Q2501	2SD601ARTX	TRANSISTOR
Q2502	2SD601ARTX	TRANSISTOR
Q2503	2SD601ARTX	TRANSISTOR
Q2504	2SD601ARTX	TRANSISTOR
Q2505	2SD601ARTX	TRANSISTOR
Q2506	2SD601ARTX	TRANSISTOR
Q2507	2SD601ARTX	TRANSISTOR
Q2508	2SB709ARTX	TRANSISTOR
Q2509	2SD601ARTX	TRANSISTOR
Q2510	2SC2778TX	TRANSISTOR
Q2511	2SC2778TX	TRANSISTOR
Q2512	2SD601ARTX	TRANSISTOR
Q2513	2SC2480TX	TRANSISTOR
Q2514	2SC2778TX	TRANSISTOR
Q2515	2SD601ARTX	TRANSISTOR
Q2516	2SD601ARTX	TRANSISTOR
Q2601	2SB709ARTX	TRANSISTOR
Q2602	2SD601ARTX	TRANSISTOR
Q2603	2SD601ARTX	TRANSISTOR
Q2604	2SD601ARTX	TRANSISTOR
Q2605	2SD601ARTX	TRANSISTOR
Q2606	2SD601ARTX	TRANSISTOR
Q2607	2SD601ARTX	TRANSISTOR
Q2615	2SB709ARTX	TRANSISTOR
Q2616	2SD601ARTX	TRANSISTOR
Q2623	2SD601ARTX	TRANSISTOR
Q2624	2SD601ARTX	TRANSISTOR
Q2625	2SD601ARTX	TRANSISTOR
Q2853	2SD601ARTX	TRANSISTOR
Q2854	2SD601ARTX	TRANSISTOR
Q2855	2SB709ARTX	TRANSISTOR
Q2862	2SD601ARTX	TRANSISTOR
Q2863	2SB709ARTX	TRANSISTOR
Q2864	2SB709ARTX	TRANSISTOR
Q2865	2SB709ARTX	TRANSISTOR
Q2866	2SD601ARTX	TRANSISTOR
Q2868	2SD601ARTX	TRANSISTOR
Q2870	2SD601ARTX	TRANSISTOR
Q2907	2SB709ARTX	TRANSISTOR
Q2913	2SB709ARTX	TRANSISTOR
Q2938	2SD601ARTX	TRANSISTOR
Q2961	2SD601ARTX	TRANSISTOR
Q2962	2SD601ARTX	TRANSISTOR
Q2963	2SD601ARTX	TRANSISTOR
Q2967	2SD601ARTX	TRANSISTOR
Q2969	2SD601ARTX	TRANSISTOR
Q2971	2SD601ARTX	TRANSISTOR
Q3031	2SB709ARTX	TRANSISTOR
Q3032	2SD601ARTX	TRANSISTOR
Q3051	2SD601ARTX	TRANSISTOR
Q3054	2SB709ARTX	TRANSISTOR
Q3151	2SD601ARTX	TRANSISTOR
Q3152	2SD601ARTX	TRANSISTOR
Q3153	2SD601ARTX	TRANSISTOR
Q3154	2SB709ARTX	TRANSISTOR
Q3155	2SD601ARTX	TRANSISTOR
Q3156	2SD601ARTX	TRANSISTOR
Q3157	2SB709ARTX	TRANSISTOR
Q3158	2SD601ARTX	TRANSISTOR
Q3159	2SD601ARTX	TRANSISTOR
Q3160	2SB709ARTX	TRANSISTOR
Q3161	2SD601ARTX	TRANSISTOR
Q3162	2SD601ARTX	TRANSISTOR
Q3163	2SB709ARTX	TRANSISTOR
Q3164	2SD601ARTX	TRANSISTOR
Q3165	2SD601ARTX	TRANSISTOR
Q3166	2SB709ARTX	TRANSISTOR
Q3167	2SD601ARTX	TRANSISTOR
Q3168	2SD601ARTX	TRANSISTOR
Q3169	2SB709ARTX	TRANSISTOR
Q3170	2SD601ARTX	TRANSISTOR
Q3171	2SD601ARTX	TRANSISTOR
Q3172	2SD601ARTX	TRANSISTOR
Q3175	2SD601ARTX	TRANSISTOR
Q3178	2SD601ARTX	TRANSISTOR
Q3179	2SD601ARTX	TRANSISTOR
Q3180	2SB709AITX	TRANSISTOR
Q3185	2SD601ARTX	TRANSISTOR
Q3186	2SB709ARTX	TRANSISTOR
Q3187	2SD601ARTX	TRANSISTOR
Q3188	2SB709ARTX	TRANSISTOR
Q3189	2SB709ARTX	TRANSISTOR
Q3190	2SB709ARTX	TRANSISTOR
Q3191	2SB709ARTX	TRANSISTOR
Q3192	2SD601ARTX	TRANSISTOR
Q3193	2SD601ARTX	TRANSISTOR
Q3194	2SD601ARTX	TRANSISTOR
Q3195	2SB709AITX	TRANSISTOR
Q3196	2SB709AITX	TRANSISTOR
Q3199	2SB709AITX	TRANSISTOR
Q3200	2SB709AITX	TRANSISTOR
Q3201	2SB709AITX	TRANSISTOR
Q3351	2SA1309ATA	TRANSISTOR
Q3361	2SA1309ATA	TRANSISTOR
Q3371	2SA1309ATA	TRANSISTOR
Q5205	2SD601ARTX	TRANSISTOR
Q5207	2SB709ARTX	TRANSISTOR

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
Q5208	2SD601ARTX	TRANSISTOR
Q5209	2SD601ARTX	TRANSISTOR
Q5214	2SD601ARTX	TRANSISTOR
Q5215	2SD601ARTX	TRANSISTOR
Q5216	2SD601ARTX	TRANSISTOR
Q5219	2SD601ARTX	TRANSISTOR
Q5222	2SD601ARTX	TRANSISTOR
Q5228	2SD601ARTX	TRANSISTOR
Q5229	2SD601ARTX	TRANSISTOR
Q5230	2SB709ARTX	TRANSISTOR
Q5231	2SD601ARTX	TRANSISTOR
Q5232	2SD601ARTX	TRANSISTOR
Q5233	2SD601ARTX	TRANSISTOR
Q5234	2SD601ARTX	TRANSISTOR
Q5235	2SD601ARTX	TRANSISTOR
Q5236	2SD601ARTX	TRANSISTOR
Q5237	2SD601ARTX	TRANSISTOR
Q5238	2SB709ARTX	TRANSISTOR
Q5239	2SD601ARTX	TRANSISTOR
Q5240	2SD601ARTX	TRANSISTOR
Q5241	2SB709ARTX	TRANSISTOR
Q5242	2SB709ARTX	TRANSISTOR
Q5243	2SD601ARTX	TRANSISTOR
Q5244	2SD601ARTX	TRANSISTOR
Q5246	2SB709ARTX	TRANSISTOR
Q5248	2SD601ARTX	TRANSISTOR
Q5257	2SB709ARTX	TRANSISTOR
Q5550	MSB709-T1	TRANSISTOR
Q5551	MSD601-T1	TRANSISTOR
Q5552	MSD601-T1	TRANSISTOR
Q5553	MSD601-T1	TRANSISTOR
Q5554	MSB709-T1	TRANSISTOR
Q5555	MSD601-T1	TRANSISTOR
Q5556	MSD601-T1	TRANSISTOR
Q5579	MSB709-T1	TRANSISTOR
Q5580	MSD601-T1	TRANSISTOR
Q5601	MSD601-T1	TRANSISTOR
Q5602	MSD601-T1	TRANSISTOR
Q5603	MSD601-T1	TRANSISTOR
Q5604	MSB709-T1	TRANSISTOR
Q5605	MSD601-T1	TRANSISTOR
Q5701	2SD601ARTX	TRANSISTOR
Q5702	2SD601ARTX	TRANSISTOR
Q5703	2SD601ARTX	TRANSISTOR
Q5704	MSB709-RT1	TRANSISTOR
Q5705	MSB709-RT1	TRANSISTOR
Q5706	MSB709-RT1	TRANSISTOR
Q5707	2SD601ARTX	TRANSISTOR
Q5708	2SD601ARTX	TRANSISTOR
Q5709	2SD601ARTX	TRANSISTOR

REF NO.	PART NO.	DESCRIPTION
Q5711	2SD601ARTX	TRANSISTOR
Q5712	2SD601ARTX	TRANSISTOR
Q5713	2SD601ARTX	TRANSISTOR
Q5714	2SD601ARTX	TRANSISTOR
Q5715	MSB709-RT1	TRANSISTOR
Q5720	MSB709-RT1	TRANSISTOR
Q5723	MSB709-RT1	TRANSISTOR
Q5724	MSB709-RT1	TRANSISTOR
Q5725	MSB709-RT1	TRANSISTOR
Q5726	2SD601ARTX	TRANSISTOR
Q5728	MSB709-T1	TRANSISTOR
Q5730	MSB709-T1	TRANSISTOR
Q5731	MSB709-T1	TRANSISTOR
Q5732	MSB709-T1	TRANSISTOR
Q5733	MSB709-T1	TRANSISTOR
Q5734	MSB709-T1	TRANSISTOR
Q5736	MSB709-T1	TRANSISTOR
Q5739	2SD601ARTX	TRANSISTOR
Q5740	2SD601ARTX	TRANSISTOR
Q5741	2SD601ARTX	TRANSISTOR
Q5742	2SD601ARTX	TRANSISTOR
Q5743	MSD601-T1	TRANSISTOR
Q5744	MSB709-T1	TRANSISTOR
Q5745	MSD601-T1	TRANSISTOR
Q5746	MSB709-T1	TRANSISTOR
Q5747	MSB709-RT1	TRANSISTOR
Q5748	MSB709-RT1	TRANSISTOR
Q5749	MSB709-RT1	TRANSISTOR
Q5750	2SD601ARTX	TRANSISTOR
Q5751	2SD601ARTX	TRANSISTOR
Q7006	2SD601ARTX	TRANSISTOR
Q7007	2SD601ARTX	TRANSISTOR
Q7101	MSD601-T1	TRANSISTOR
Q7102	MSD601-T1	TRANSISTOR
Q7103	MSB709-T1	TRANSISTOR
Q7104	MSB709-T1	TRANSISTOR
Q7105	MSB709-T1	TRANSISTOR
Q7106	MSD601-T1	TRANSISTOR
Q7107	MSD601-T1	TRANSISTOR
Q7402	MSD601-T1	TRANSISTOR
Q7804	2SD601ARTX	TRANSISTOR
Q7805	2SB709ARTX	TRANSISTOR
Q7905	2SC3526H	TRANSISTOR
Q7925	2SC3526H	TRANSISTOR
Q7945	2SC3526H	TRANSISTOR
Q7946	2SB709A	TRANSISTOR
Q7966	2SB709ARTX	TRANSISTOR
Q8638	2SD601ARTX	TRANSISTOR
Q8639	2SD601ARTX	TRANSISTOR
Q8640	2SD601ARTX	TRANSISTOR

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
Q8647	2SD601ARTX	TRANSISTOR
		RELAYS
RL801	**TSEH8007**	**RELAY**
RL2301	TSEH8017	RELAY
RL2302	TSEH8017	RELAY
		RESISTORS
R001	ERDS2TJ102	RES,C 1K-J-1/4
R002	ERJ6GEYJ102	RES,M 1K-J-1/10
R003	ERDS2TJ102	RES,C 1K-J-1/4
R005	ERDS2TJ104	RES,C 100K-J-1/4
R006	ERDS2TJ104	RES,C 100K-J-1/4
R008	ERJ6GEYJ102	RES,M 1K-J-1/10
R011	ERJ6ENF1002	RES,M 10K-F-1/10
R012	ERJ6GEYJ473	RES,M 47K-J-1/10
R013	ERJ6GEYJ182	RES,M 1.8K-J-1/10
R014	ERJ6GEYJ182	RES,M 1.8K-J-1/10
R015	ERJ6GEYJ182	RES,M 1.8K-J-1/10
R016	ERJ6GEYJ103	RES,M 10K-J-1/10
R017	ERDS2TJ103	RES,C 10K-J-1/4
R018	ERDS2TJ103	RES,C 10K-J-1/4
R019	ERDS2TJ103	RES,C 10K-J-1/4
R020	ERJ6GEYJ471	RES,M 470-J-1/10
R021	ERDS2TJ562	RES,C 5.6K-J-1/4
R022	ERDS2TJ102	RES,C 1K-J-1/4
R023	ERJ6GEYJ102	RES,M 1K-J-1/10
R024	ERJ6GEYJ102	RES,M 1K-J-1/10
R025	ERJ6GEYJ102	RES,M 1K-J-1/10
R026	ERJ6GEYJ102	RES,M 1K-J-1/10
R028	ERJ6GEYJ102	RES,M 1K-J-1/10
R029	ERJ6GEYJ102	RES,M 1K-J-1/10
R030	ERJ6GEYJ102	RES,M 1K-J-1/10
R031	ERJ6GEYJ102	RES,M 1K-J-1/10
R032	ERJ6ENF1601	RES,M 1.6K-F-1/10W
R033	ERJ6ENF6800	RES,M 680-F-1/10
R034	ERJ6GEYJ103	RES,M 10K-J-1/10
R035	ERJ6GEYJ471	RES,M 470-J-1/10
R036	ERJ6GEYJ331	RES,M 330-J-1/10
R037	ERJ6GEYJ101	RES,M 100-J-1/10
R040	ERJ6ENF1000	RES,M 100-F-1/10
R041	ERJ6ENF1201	RES,M 1.2K-F-1/10
R043	ERJ6GEYJ682	RES,M 6.8K-J-1/10
R044	ERJ6GEYJ151	RES,M 150-J-1/10
R047	ERJ6GEYJ102	RES,M 1K-J-1/10
R048	ERJ6GEYJ102	RES,M 1K-J-1/10
R051	ERJ6GEYJ471	RES,M 470-J-1/10
R052	ERJ6GEYJ101	RES,M 100-J-1/10
R053	ERJ6GEYJ101	RES,M 100-J-1/10
R054	ERJ6GEYJ103	RES,M 10K-J-1/10
R055	ERDS2TJ471	RES,C 470-J-1/4
R056	ERJ6GEYJ472	RES,M 4.7K-J-1/10
R057	ERJ6GEYJ472	RES,M 4.7K-J-1/10

REF NO.	PART NO.	DESCRIPTION
R058	ERJ6GEYJ472	RES,M 4.7K-J-1/10
R059	ERJ6GEYJ472	RES,M 4.7K-J-1/10
R060	ERJ6GEYJ102	RES,M 1K-J-1/10
R061	ERJ6GEYJ102	RES,M 1K-J-1/10
R063	ERJ6GEYJ471	RES,M 470-J-1/10
R064	ERJ6ENF1000	RES,M 100-F-1/10
R065	ERJ6GEYJ471	RES,M 470-J-1/10
R066	ERJ6ENF1000	RES,M 100-F-1/10
R067	ERJ6GEYJ471	RES,M 470-J-1/10
R068	ERJ6GEYJ103	RES,M 10K-J-1/10
R072	ERDS2TJ101	RES,C 100-J-1/4
R073	ERDS2TJ471	RES,C 470-J-1/4
R080	ER0S2CKF2201	RES,M 2.2K-F-1/4
R081	ER0S2CKF2201	RES,M 2.2K-F-1/4
R082	ER0S2CKF3001	RES,M 3K-F-1/4
R083	ER0S2CKF4421	RES,M 4.42K-F-1/4
R084	ER0S2CKF8201	RES,M 8.2K-F-1/4
R085	ERDS2TJ223	RES,C 22K-J-1/4
R086	ERDS2TJ101	RES,C 100-J-1/4
R094	ERJ6GEYJ220	RES,M 22-J-1/10
R095	ERJ6GEYJ561	RES,M 560-J-1/10
R102	ERJ6GEYJ102	RES,M 1K-J-1/10
R103	ERJ6GEYJ102	RES,M 1K-J-1/10
R112	ERJ6GEYJ102	RES,M 1K-J-1/10
R113	ERJ6GEYJ221	RES,M 220-J-1/10
R114	ERJ6GEYJ332	RES,M 3.3K-J-1/10
R115	EVND2AA03B33	CONTROL 3K
R117	ERJ6GEYJ101	RES,M 100-J-1/10
R118	ERJ6GEYJ331	RES,M 330-J-1/10
R119	ERJ6GEYJ152	RES,M 1.5K-J-1/10
R121	ERJ6GEYJ121	RES,M 120-J-1/10
R125	ERJ6GEYJ331	RES,M 330-J-1/10
R126	ERJ6GEYJ183	RES,M 18K-J-1/10
R128	ERJ6GEYJ683	RES,M 68K-J-1/10
R129	ERJ6GEYJ103	RES,M 10K-J-1/10
R135	ERJ6GEYJ331	RES,M 330-J-1/10
R151	ERJ6GEYJ473	RES,M 47K-J-1/10
R152	ERJ6GEYJ473	RES,M 47K-J-1/10
R202	ERJ6GEYJ221	RES,M 220-J-1/10
R355	ERDS2TJ470	RES,C 47-J-1/4
R357	ERG7ZJ272	RES,M 2.7K-J-7W
R358	ERDS2TJ473	RES,C 47K-J-1/4
R359	ERDS2TJ563	RES,C 56K-J-1/4
R362	ERC12GK331	RES,C 330-K-1/2W
R365	ERDS2TJ821	RES,C 820-J-1/4
R366	ERG12SJ101P	RES,M 100-J-1W
R367	ERG12SJ101P	RES,M 100-J-1W
R368	ERDS1FJ330	RES,C 33-J-1/2
R369	ERDS1FJ330	RES,C 33-J-1/2
R372	ERC12GK331	RES,C 330-K-1/2W
R373	ERG7ZJ272	RES,M 2.7K-J-7W

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
R375	ERDS2TJ470	RES,C 47-J-1/4
R377	ERDS2TJ104	RES,C 100K-J-1/4
R378	ERDS2TJ473	RES,C 47K-J-1/4
R379	ERDS2TJ563	RES,C 56K-J-1/4
R382	ERC12GK331	RES,C 330-K-1/2W
R383	ERG7ZJ272	RES,M 2.7K-J-7W
R385	ERDS2TJ821	RES,C 820-J-1/4
R386	ERG12SJ101P	RES,M 100-J-1W
R387	ERG12SJ101P	RES,M 100-J-1W
R388	ERDS1FJ330	RES,C 33-J-1/2
R389	ERDS1FJ330	RES,C 33-J-1/2
R390	ERDS2TJ821	RES,C 820-J-1/4
R391	ERG12SJ101P	RES,M 100-J-1W
R392	ERG12SJ101P	RES,M 100-J-1W
R393	ERDS1FJ330	RES,C 33-J-1/2
R394	ERDS1FJ330	RES,C 33-J-1/2
R395	ERDS2TJ470	RES,C 47-J-1/4
R398	ERDS2TJ473	RES,C 47K-J-1/4
R399	ERDS2TJ563	RES,C 56K-J-1/4
R401	ERJ6GEYJ471	RES,M 470-J-1/10
R402	ERJ6ENF7501	RES,M 7.5K-F-1/10W
R403	ERJ6ENF5102	RES,M 51K-F-1/10W
R405	ERJ6ENF1241	RES,M 1.24K-F-1/10W
R406	ERJ6ENF1202	RES,M 12K-F-1/10
R411	ERJ6ENF2202	RES,M 22K-F-1/10W
R412	ERJ6ENF1202	RES,M 12K-F-1/10
R413	ERJ6GEYJ563	RES,M 56K-J-1/10
R414	ERJ6GEYJ221	RES,M 220-J-1/10
R415	ERJ6GEYJ102	RES,M 1K-J-1/10
R416	ERJ6GEYJ560	RES,M 56-J-1/10
R417	ERJ6GEYJ560	RES,M 56-J-1/10
R418	ERJ6GEYJ683	RES,M 68K-J-1/10
R419	ERJ6GEYJ223	RES,M 22K-J-1/10
R420	ERJ6ENF1331	RES,M 1.33K-F-1/10W
R421	ERJ6ENF1002	RES,M 10K-F-1/10
R441	ERDS2TJ101	RES,C 100-J-1/4
R442	ERJ6GEYJ101	RES,M 100-J-1/10
R443	ERJ6GEYJ561	RES,M 560-J-1/10
R444	ERJ6GEYJ821	RES,M 820-J-1/10
R451	**ERQ12HKR33**	**RES,F .33-K-1/2**
R452	ER0S2CKF6801	RES,M 6.8K-F-1/4
R453	ER0S2CKF2001	RES,M 2K-F-1/4W
R454	ERDS1FJ1R2	RES,C 1.2-J-1/2
R456	ERDS1FJ1R2	RES,C 1.2-J-1/2
R457	ERDS2TJ472	RES,C 4.7K-J-1/4
R458	ERDS2TJ102	RES,C 1K-J-1/4
R459	ERDS2TJ472	RES,C 4.7K-J-1/4
R460	ERDS2TJ152	RES,C 1.5K-J-1/4
R461	ERDS2TJ103	RES,C 10K-J-1/4
R462	ERDS2TJ223	RES,C 22K-J-1/4
R463	ERG1SJ391P	RES,M 390-J-1W

REF NO.	PART NO.	DESCRIPTION
R464	ERDS1FJ1R5	RES,C 1.5-J-1/2
R467	ERDS2TJ331	RES,C 330-J-1/4
R468	ERDS2TJ331	RES,C 330-J-1/4
R469	ERDS2TJ331	RES,C 330-J-1/4
R470	ERDS2TJ821	RES,C 820-J-1/4
R472	ERJ6GEYJ102	RES,M 1K-J-1/10
R473	ERJ6GEYJ223	RES,M 22K-J-1/10
R474	ERJ6GEYJ101	RES,M 100-J-1/10
R475	ERJ6GEYJ560	RES,M 56-J-1/10
R476	ERJ6GEYJ560	RES,M 56-J-1/10
R478	ERJ6GEYJ472	RES,M 4.7K-J-1/10
R480	ERJ6GEYJ123	RES,M 12K-J-1/10
R492	ERDS2TJ272	RES,C 2.7K-J-1/4
R493	ERDS2TJ104	RES,C 100K-J-1/4
R494	ERDS2TJ274	RES,C 270K-J-1/4
R495	ERDS2TJ104	RES,C 100K-J-1/4
R496	ERDS2TJ153	RES,C 15K-J-1/4
R501	ERG3FJ100H	RES,M 10-J-3W
R503	ERDS1TJ681	RES,C 680-J-1/2
R504	ERDS1TJ681	RES,C 680-J-1/2
R505	ERX3SJR27	RES,M .27-J-3W
R521	ERJ6ENF1202	RES,M 12K-F-1/10
R522	ERJ6ENF7501	RES,M 7.5K-F-1/10W
R523	ERJ6GEYJ101	RES,M 100-J-1/10
R524	ERJ6GEYJ221	RES,M 220-J-1/10
R530	ERJ6GEYJ101	RES,M 100-J-1/10
R531	ERJ6GEYJ103	RES,M 10K-J-1/10
R533	ERJ6GEYJ101	RES,M 100-J-1/10
R534	EVN32CA00B53	CONTROL 5K
R535	ERJ6GEYJ682	RES,M 6.8K-J-1/10
R536	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R537	ERJ6GEYJ822	RES,M 8.2K-J-1/10
R538	ERJ6GEYJ105	RES,M 1.0MEG-J-1/10
R540	ERJ6ENF1471	RES,M 1.47K-F-1/10W
R541	ERJ6GEYJ472	RES,M 4.7K-J-1/10
R542	ERJ6GEYJ101	RES,M 100-J-1/10
R543	ERJ6ENF1782	RES,M 17.8K-F-1/20W
R545	ERJ6GEYJ101	RES,M 100-J-1/10
R548	ERJ6GEYJ221	RES,M 220-J-1/10
R549	ERJ6GEYJ151	RES,M 150-J-1/10
R552	ERDS2TJ220	RES,C 22-J-1/4
R555	ERDS2TJ821	RES,C 820-J-1/4
R569	ERDS1TJ120	RES,C 12-J-1/2W
R582	ERDS2TJ222	RES,C 2.2K-J-1/4
R583	ER0S2CKF4752	RES,M 47.5K-F-1/4W
R584	ER0S2CKF3322	RES,M 33.2K-F-1/4W
R585	ERDS2TJ332	RES,C 3.3K-J-1/4
R587	ER0S2CKF1002	RES,M 10K-F-1/4
R650	ERDS2TJ750	RES,C 75-J-1/4
R654	ERDS2TJ184	RES,C 180K-J-1/4
R655	ERDS2TJ184	RES,C 180K-J-1/4

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
R751	ERDS2TJ223	RES,C 22K-J-1/4
R752	ERDS2TJ562	RES,C 5.6K-J-1/4
R753	ERDS2TJ100	RES,C 10-J-1/4
R754	ERDS2TJ103	RES,C 10K-J-1/4
R755	ERDS2TJ153	RES,C 15K-J-1/4
R756	ERDS2TJ153	RES,C 15K-J-1/4
R758	ERDS2TJ103	RES,C 10K-J-1/4
R759	ERDS2TJ103	RES,C 10K-J-1/4
R760	ERDS2TJ222	RES,C 2.2K-J-1/4
R761	ERJ6GEYJ123	RES,M 12K-J-1/10
R762	ERJ6GEYJ103	RES,M 10K-J-1/10
R763	ERJ6GEYJ272	RES,M 2.7K-J-1/10
R764	ERDS2TJ332	RES,C 3.3K-J-1/4
R765	ERDS2TJ391	RES,C 390-J-1/4
R766	ERQ1CJP680	RES,F 68-J-1W
R767	ERD25FJ122	RES,C 1.2K-J-1/4
R768	ERG2FJ222H	RES,M 2.2K-J-2W
R769	ERX3SJ1R8	RES,M 1.8-J-3W
R771	ERDS2TJ102	RES,C 1K-J-1/4
R772	ERD50TJ104	RES,C 100K-J-1/2
R773	ERDS2TJ272	RES,C 2.7K-J-1/4
R775	ERDS2TJ102	RES,C 1K-J-1/4
R802	**ERF20ZK1R5**	**RES,W 1.5-K-20W**
R804	ERD50TJ104	RES,C 100K-J-1/2
R805	ERD50TJ104	RES,C 100K-J-1/2
R806	ERD50TJ104	RES,C 100K-J-1/2
R807	ERDS2TJ472	RES,C 4.7K-J-1/4
R809	ERDS2TJ104	RES,C 100K-J-1/4
R810	**ERX12SJR22**	**RES,M .22-J-1/2**
R811	**ERX12SJR22**	**RES,M .22-J-1/2**
R812	ERDS2TJ103	RES,C 10K-J-1/4
R813	ERDS1FJ471	RES,C 470-J-1/2
R814	ERDS2TJ4R7	RES,C 4.7-J-1/4
R815	ERDS2TJ222	RES,C 2.2K-J-1/4
R816	ERDS2TJ471	RES,C 470-J-1/4
R817	ERDS2TJ152	RES,C 1.5K-J-1/4
R818	ERDS2TJ100	RES,C 10-J-1/4
R819	**ERX12SJR22**	**RES,M .22-J-1/2**
R820	ERDS1FJ470	RES,C 47-J-1/2
R821	ERDS2TJ471	RES,C 470-J-1/4
R822	ERDS2TJ102	RES,C 1K-J-1/4
R823	ERDS2TJ222	RES,C 2.2K-J-1/4
R825	ERDS2TJ152	RES,C 1.5K-J-1/4
R826	ERDS2TJ333	RES,C 33K-J-1/4
R827	ERDS2TJ103	RES,C 10K-J-1/4
R828	ERDS2TJ104	RES,C 100K-J-1/4
R829	ERDS2TJ104	RES,C 100K-J-1/4
R830	**ERC12ZGM825**	**RES,S 8.2MEG-M-1/2**
R832	ERDS2TJ102	RES,C 1K-J-1/4
R835	**ERX1SJ1R0**	**RES,M 1.0-J-1W**
R836	**ERX1SJ1R0**	**RES,M 1.0-J-1W**

REF NO.	PART NO.	DESCRIPTION
R837	ERDS1FJ122	RES,C 1.2K-J-1/2
R838	ERDS2TJ562	RES,C 5.6K-J-1/4
R839	ERDS2TJ563	RES,C 56K-J-1/4
R840	ERDS2TJ682	RES,C 6.8K-J-1/4
R841	**ERX1SJR27**	**RES,M .27-J-1W**
R842	ERDS2TJ102	RES,C 1K-J-1/4
R843	ERDS2TJ222	RES,C 2.2K-J-1/4
R844	ERDS2TJ562	RES,C 5.6K-J-1/4
R845	ERDS2TJ273	RES,C 27K-J-1/4
R846	ERDS2TJ102	RES,C 1K-J-1/4
R847	**ERX1SJR39**	**RES,M .39-J-1W**
R852	ERG2SJ823H	RES,M 82K-J-2W
R860	ERDS2TJ222	RES,C 2.2K-J-1/4
R861	**ERQ12HKR22**	**RES,F .22-K-1/2**
R863	ERDS2TJ184	RES,C 180K-J-1/4
R864	**ERF5ZK4R7**	**RES,W 4.7-K-5W**
R866	ERDS2TJ182	RES,C 1.8K-J-1/4
R867	ERDS2TJ223	RES,C 22K-J-1/4
R868	ERDS2TJ332	RES,C 3.3K-J-1/4
R869	ERDS2TJ224	RES,C 220K-J-1/4
R870	ERDS2TJ332	RES,C 3.3K-J-1/4
R876	ERDS2TJ103	RES,C 10K-J-1/4
R881	ERG2SJ180H	RES,M 18-J-2W
R884	ERDS2TJ332	RES,C 3.3K-J-1/4
R885	ERJ6GEYJ562	RES,M 5.6K-J-1/10
R901	ERDS1FJ821	RES,C 820-J-1/2
R902	ERDS2TJ683	RES,C 68K-J-1/4
R903	ERDS2TJ153	RES,C 15K-J-1/4
R904	ERDS2TJ472	RES,C 4.7K-J-1/4
R905	ERDS2TJ472	RES,C 4.7K-J-1/4
R906	ERDS2TJ101	RES,C 100-J-1/4
R907	ERDS2TJ151	RES,C 150-J-1/4
R908	ERDS2TJ272	RES,C 2.7K-J-1/4
R917	ERDS2TJ470	RES,C 47-J-1/4
R922	ERDS2TJ103	RES,C 10K-J-1/4
R923	ERDS2TJ103	RES,C 10K-J-1/4
R932	ERDS2TJ103	RES,C 10K-J-1/4
R933	ERDS2TJ103	RES,C 10K-J-1/4
R942	ERDS2TJ103	RES,C 10K-J-1/4
R943	ERDS2TJ103	RES,C 10K-J-1/4
R951	ERDS2TJ271	RES,C 270-J-1/4
R952	ERDS1FJ152	RES,C 1.5K-J-1/2W
R953	ERDS2TJ271	RES,C 270-J-1/4
R954	ERDS1FJ152	RES,C 1.5K-J-1/2W
R955	ERDS2TJ271	RES,C 270-J-1/4
R956	ERDS1FJ152	RES,C 1.5K-J-1/2W
R960	ERQ14AJ100	RES,F 10-J-1/4
R964	ERDS2FJ122	RES,C 1.2K-J-1/2W
R965	ERDS2TJ683	RES,C 68K-J-1/4
R966	ERG1SJ271P	RES,M 270-J-1W
R967	ERDS2TJ683	RES,C 68K-J-1/4

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
R968	ERDS2TJ122	RES,C 1.2K-J-1/4
R969	ERDS1FJ390	RES,C 39-J-1/2
R970	ERDS1FJ8R2	RES,C 8.2-J-1/2W
R971	ERDS2TJ8R2	RES,C 8.2-J-1/4
R972	ERDS1FJ390	RES,C 39-J-1/2
R974	ERDS2FJ122	RES,C 1.2K-J-1/2W
R975	ERDS2TJ683	RES,C 68K-J-1/4
R977	ERDS2TJ683	RES,C 68K-J-1/4
R978	ERDS2TJ122	RES,C 1.2K-J-1/4
R979	ERDS1FJ390	RES,C 39-J-1/2
R980	ERDS1FJ8R2	RES,C 8.2-J-1/2W
R981	ERDS2TJ8R2	RES,C 8.2-J-1/4
R982	ERDS1FJ390	RES,C 39-J-1/2
R983	ERG1SJ271P	RES,M 270-J-1W
R984	ERDS2FJ122	RES,C 1.2K-J-1/2W
R985	ERDS2TJ683	RES,C 68K-J-1/4
R986	ERDS2TJ683	RES,C 68K-J-1/4
R987	ERDS2TJ122	RES,C 1.2K-J-1/4
R988	ERG1SJ271P	RES,M 270-J-1W
R991	ERDS1FJ390	RES,C 39-J-1/2
R992	ERDS1FJ390	RES,C 39-J-1/2
R993	ERDS1FJ6R8	RES,C 6.8-J-1/2W
R994	ERDS2TJ6R8	RES,C 6.8-J-1/4W
R1341	ERJ6GEYJ221	RES,M 220-J-1/10
R1342	ERJ6GEYJ473	RES,M 47K-J-1/10
R1343	ERJ6GEYJ224	RES,M 220K-J-1/10
R1344	ERJ6GEYJ102	RES,M 1K-J-1/10
R1345	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R1346	ERJ6GEYJ471	RES,M 470-J-1/10
R1347	ERJ6GEYJ472	RES,M 4.7K-J-1/10
R1385	ERJ6GEYJ102	RES,M 1K-J-1/10
R1386	ERJ6GEYJ221	RES,M 220-J-1/10
R1501	ERDS2TJ471	RES,C 470-J-1/4
R1502	ERDS2TJ275	RES,C 2.7MEG-J-1/4W
R1503	ERDS2TJ102	RES,C 1K-J-1/4
R1504	ERDS2TJ123	RES,C 12K-J-1/4
R1507	ERG3SJS471	RES,M 470-J-3W
R1510	ERG2SJ333	RES,M 33K-J-2W
R1511	ERG2SJ333	RES,M 33K-J-2W
R1512	ER0S2CKF1501	RES,M 1.5K-F-1/4
R1513	ER0S2CKF6042	RES,M 60.4K-F-1/4W
R1514	ERG2SJ333	RES,M 33K-J-2W
R1515	ER0S2CKF2741	RES,M 2.74K-F-1/4
R1516	ERDS2TJ101	RES,C 100-J-1/4
R1517	ER0S2CKF2801	RES,M 280-F-1/4W
R1518	ERG2SJ333	RES,M 33K-J-2W
R1519	ERDS2TJ101	RES,C 100-J-1/4
R1520	ERDS2TJ221	RES,C 220-J-1/4
R1521	ER0S2CKF1000	RES,M 10-F-1/4
R1522	ERC12GK103	RES,C 10K-K-1/2W
R1523	ERDS2TJ104	RES,C 100K-J-1/4

REF NO.	PART NO.	DESCRIPTION
R1524	ER0S2CKF1500	RES,M 150-F-1/4W
R1525	ERDS2TJ224	RES,C 220K-J-1/4
R1526	EVN38CA00B15	CONTROL 100K
R1527	ERDS2TJ273	RES,C 27K-J-1/4
R1528	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R1529	ERJ6GEYJ182	RES,M 1.8K-J-1/10
R1530	ERJ6GEYJ393	RES,M 39K-J-1/10
R1531	ERJ6GEYJ563	RES,M 56K-J-1/10
R1532	ERJ6GEYJ223	RES,M 22K-J-1/10
R1534	ERDS2TJ472	RES,C 4.7K-J-1/4
R1535	ERDS2TJ393	RES,C 39K-J-1/4
R1536	ERJ6GEYJ563	RES,M 56K-J-1/10
R1537	ERDS2TJ473	RES,C 47K-J-1/4
R1538	ERJ6GEYJ563	RES,M 56K-J-1/10
R1539	ERJ6GEYJ124	RES,M 120K-J-1/10
R1540	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R1541	ERJ6GEYJ182	RES,M 1.8K-J-1/10
R1542	ERG2SJ333	RES,M 33K-J-2W
R1544	ERDS2TJ101	RES,C 100-J-1/4
R1546	ERDS2TJ221	RES,C 220-J-1/4
R1581	ERDS2TJ682	RES,C 6.8K-J-1/4
R1582	ERDS2TJ222	RES,C 2.2K-J-1/4
R1583	ERDS2TJ562	RES,C 5.6K-J-1/4
R1584	ERDS2TJ472	RES,C 4.7K-J-1/4
R1585	ERDS2TJ222	RES,C 2.2K-J-1/4
R1586	ERDS2TJ222	RES,C 2.2K-J-1/4
R1587	ERDS2TJ103	RES,C 10K-J-1/4
R1588	**ER0S2CKF7151**	**RES,M 7.15K-F-1/4**
R1589	**ER0S2CKF2552**	**RES,M 25.5K-F-1/4**
R1590	**ERQ12HJ330**	**RES,F 33-J-1/2**
R1910	ERJ6GEYJ273	RES,M 27K-J-1/10
R1911	ERJ6GEYJ472	RES,M 4.7K-J-1/10
R1912	ERJ6GEYJ102	RES,M 1K-J-1/10
R1913	ERJ6GEYJ101	RES,M 100-J-1/10
R1916	ERJ6GEYJ471	RES,M 470-J-1/10
R1917	ERJ6GEYJ331	RES,M 330-J-1/10
R1918	ERJ6GEYJ471	RES,M 470-J-1/10
R1920	ERJ6GEYJ392	RES,M 3.9K-J-1/10
R1921	ERJ6GEYJ823	RES,M 82K-J-1/10
R1922	ERJ6GEYJ153	RES,M 15K-J-1/10
R1923	ERJ6GEYJ472	RES,M 4.7K-J-1/10
R1924	ERJ6GEYJ102	RES,M 1K-J-1/10
R1925	ERJ6GEYJ473	RES,M 47K-J-1/10
R1926	ERJ6GEYJ223	RES,M 22K-J-1/10
R1927	ERJ6GEYJ122	RES,M 1.2K-J-1/10
R1928	ERJ6GEYJ562	RES,M 5.6K-J-1/10
R1929	ERJ6GEYJ101	RES,M 100-J-1/10
R1930	ERJ6GEYJ152	RES,M 1.5K-J-1/10
R1931	ERJ6GEYJ331	RES,M 330-J-1/10
R1932	ERJ6GEYJ102	RES,M 1K-J-1/10
R1933	ERDS2TJ103	RES,C 10K-J-1/4

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
R1934	ERJ6GEYJ823	RES,M 82K-J-1/10
R1935	ERJ6GEYJ153	RES,M 15K-J-1/10
R1936	ERJ6GEYJ472	RES,M 4.7K-J-1/10
R1937	ERJ6GEYJ102	RES,M 1K-J-1/10
R1938	ERJ6GEYJ682	RES,M 6.8K-J-1/10
R1942	ERJ6GEYJ271	RES,M 270-J-1/10
R1943	ERJ6GEYJ823	RES,M 82K-J-1/10
R1944	ERJ6GEYJ153	RES,M 15K-J-1/10
R1945	ERJ6GEYJ472	RES,M 4.7K-J-1/10
R1946	ERJ6GEYJ102	RES,M 1K-J-1/10
R1947	ERJ6GEYJ101	RES,M 100-J-1/10
R1949	ERJ6GEYJ153	RES,M 15K-J-1/10
R1950	ERJ6GEYJ823	RES,M 82K-J-1/10
R1951	ERJ6GEYJ102	RES,M 1K-J-1/10
R1952	ERJ6GEYJ101	RES,M 100-J-1/10
R1953	ERJ6GEYJ392	RES,M 3.9K-J-1/10
R2106	ERJ6GEYJ183	RES,M 18K-J-1/10
R2107	ERDS2TJ273	RES,C 27K-J-1/4
R2109	ERJ6GEYJ683	RES,M 68K-J-1/10
R2110	ERJ6GEYJ331	RES,M 330-J-1/10
R2111	ERJ6GEYJ152	RES,M 1.5K-J-1/10
R2112	ERJ6GEYJ331	RES,M 330-J-1/10
R2113	ERJ6GEYJ102	RES,M 1K-J-1/10
R2114	ERJ6GEYJ331	RES,M 330-J-1/10
R2116	ERJ6ENF1501	RES,M 1.5K-F-1/10
R2117	ERJ6GEYJ121	RES,M 120-J-1/10
R2118	EVND8AA03B14	CONTROL 10K
R2119	ERJ6GEYJ392	RES,M 3.9K-J-1/10
R2121	ERJ6GEYJ471	RES,M 470-J-1/10
R2122	ERJ6GEYJ473	RES,M 47K-J-1/10
R2123	ERJ6GEYJ473	RES,M 47K-J-1/10
R2124	ERJ6GEYJ332	RES,M 3.3K-J-1/10
R2125	ERDS2TJ104	RES,C 100K-J-1/4
R2126	ERDS2TJ104	RES,C 100K-J-1/4
R2127	ERDS2TJ101	RES,C 100-J-1/4
R2129	ERJ6GEYJ392	RES,M 3.9K-J-1/10
R2201	ERJ6GEYJ472	RES,M 4.7K-J-1/10
R2202	ERJ6GEYJ153	RES,M 15K-J-1/10
R2203	ERJ6GEYJ104	RES,M 100K-J-1/10
R2204	ERJ6GEYJ473	RES,M 47K-J-1/10
R2205	ERJ6GEYJ154	RES,M 150K-J-1/10
R2208	ERJ6ENF9102	RES,M 91K-F-1/10
R2212	ERJ6GEYJ682	RES,M 6.8K-J-1/10
R2230	ERJ6GEYJ332	RES,M 3.3K-J-1/10
R2231	ERJ6GEYJ562	RES,M 5.6K-J-1/10
R2301	ERJ6GEYJ103	RES,M 10K-J-1/10
R2303	ERJ6GEYJ103	RES,M 10K-J-1/10
R2305	ERJ6GEYJ102	RES,M 1K-J-1/10
R2306	ERJ6GEYJ563	RES,M 56K-J-1/10
R2307	ERJ6GEYJ102	RES,M 1K-J-1/10
R2308	ERJ6GEYJ102	RES,M 1K-J-1/10

REF NO.	PART NO.	DESCRIPTION
R2309	ERJ6ENF1002	RES,M 10K-F-1/10
R2310	ERJ6ENF7501	RES,M 7.5K-F-1/10W
R2311	ERJ6GEYJ152	RES,M 1.5K-J-1/10
R2312	ERJ6GEYJ332	RES,M 3.3K-J-1/10
R2313	ERJ6GEYJ152	RES,M 1.5K-J-1/10
R2314	ERJ6GEYJ332	RES,M 3.3K-J-1/10
R2315	ERDS1FJ102	RES,C 1K-J-1/2
R2318	ERJ6GEYJ472	RES,M 4.7K-J-1/10
R2319	ERDS1FJ102	RES,C 1K-J-1/2
R2320	ERJ6GEYJ123	RES,M 12K-J-1/10
R2321	ERJ6GEYJ123	RES,M 12K-J-1/10
R2324	RXE110-AP	POLY SW
R2351	ERJ6GEYJ223	RES,M 22K-J-1/10
R2352	ERJ6GEYJ223	RES,M 22K-J-1/10
R2354	ERJ6GEYJ271	RES,M 270-J-1/10
R2355	ERJ6GEYJ271	RES,M 270-J-1/10
R2356	ERJ6GEYJ472	RES,M 4.7K-J-1/10
R2357	ERJ6GEYJ102	RES,M 1K-J-1/10
R2358	ERJ6GEYJ103	RES,M 10K-J-1/10
R2359	ERJ6GEYJ472	RES,M 4.7K-J-1/10
R2360	ERJ6GEYJ683	RES,M 68K-J-1/10
R2401	ERJ6GEYJ224	RES,M 220K-J-1/10
R2402	ERJ6GEYJ221	RES,M 220-J-1/10
R2403	ERJ6GEYJ221	RES,M 220-J-1/10
R2404	ERJ6GEYJ224	RES,M 220K-J-1/10
R2405	ERJ6GEYJ102	RES,M 1K-J-1/10
R2406	ERJ6GEYJ102	RES,M 1K-J-1/10
R2407	ERJ6GEYJ103	RES,M 10K-J-1/10
R2408	ERJ6GEYJ473	RES,M 47K-J-1/10
R2409	ERJ6GEYJ183	RES,M 18K-J-1/10
R2410	ERJ6GEYJ472	RES,M 4.7K-J-1/10
R2411	ERJ6GEYJ103	RES,M 10K-J-1/10
R2412	ERJ6GEYJ332	RES,M 3.3K-J-1/10
R2413	ERJ6GEYJ103	RES,M 10K-J-1/10
R2414	ERJ6GEYJ103	RES,M 10K-J-1/10
R2415	ERJ6GEYJ332	RES,M 3.3K-J-1/10
R2416	ERJ6GEYJ103	RES,M 10K-J-1/10
R2417	ERJ6GEYJ102	RES,M 1K-J-1/10
R2418	ERJ6GEYJ183	RES,M 18K-J-1/10
R2419	ERJ6GEYJ472	RES,M 4.7K-J-1/10
R2420	ERJ6GEYJ102	RES,M 1K-J-1/10
R2421	ERJ6GEYJ103	RES,M 10K-J-1/10
R2422	ERJ6GEYJ473	RES,M 47K-J-1/10
R2423	ERJ6GEYJ472	RES,M 4.7K-J-1/10
R2424	ERJ6GEYJ472	RES,M 4.7K-J-1/10
R2425	ERJ6GEYJ561	RES,M 560-J-1/10
R2426	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R2427	ERJ6GEYJ561	RES,M 560-J-1/10
R2428	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R2429	ERJ6GEYJ472	RES,M 4.7K-J-1/10
R2501	ERJ6GEYJ221	RES,M 220-J-1/10

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
R2505	ERJ6GEYJ102	RES,M 1K-J-1/10
R2506	ERJ6GEYJ221	RES,M 220-J-1/10
R2507	ERJ6GEYJ221	RES,M 220-J-1/10
R2508	ERJ6GEYJ221	RES,M 220-J-1/10
R2509	ERJ6GEYJ102	RES,M 1K-J-1/10
R2510	ERJ6GEYJ183	RES,M 18K-J-1/10
R2511	ERJ6GEYJ393	RES,M 39K-J-1/10
R2512	ERJ6GEYJ183	RES,M 18K-J-1/10
R2513	ERJ6GEYJ393	RES,M 39K-J-1/10
R2514	ERJ6GEYJ183	RES,M 18K-J-1/10
R2515	ERJ6GEYJ393	RES,M 39K-J-1/10
R2516	ERJ6ENF1001	RES,M 1K-F-1/10
R2517	ERJ6ENF1001	RES,M 1K-F-1/10
R2518	ERJ6GEYJ562	RES,M 5.6K-J-1/10
R2519	ERJ6ENF1501	RES,M 1.5K-F-1/10
R2520	ERJ6ENF9100	RES,M 910-F-1/10W
R2521	ERJ6ENF7500	RES,M 750-F-1/10W
R2522	ERJ6GEYJ562	RES,M 5.6K-J-1/10
R2523	ERJ6ENF1201	RES,M 1.2K-F-1/10
R2524	ERJ6GEYJ102	RES,M 1K-J-1/10
R2525	ERJ6GEYJ102	RES,M 1K-J-1/10
R2526	ERJ6GEYJ562	RES,M 5.6K-J-1/10
R2527	ERJ6GEYJ102	RES,M 1K-J-1/10
R2528	ERJ6GEYJ562	RES,M 5.6K-J-1/10
R2529	ERJ6GEYJ392	RES,M 3.9K-J-1/10
R2530	ERJ6GEYJ221	RES,M 220-J-1/10
R2531	ERJ6GEYJ331	RES,M 330-J-1/10
R2532	ERJ6GEYJ331	RES,M 330-J-1/10
R2533	ERJ6GEYJ331	RES,M 330-J-1/10
R2534	ERJ6GEYJ331	RES,M 330-J-1/10
R2535	ERJ6GEYJ331	RES,M 330-J-1/10
R2536	ERJ6GEYJ101	RES,M 100-J-1/10
R2537	ERJ6GEYJ392	RES,M 3.9K-J-1/10
R2538	ERJ6GEYJ101	RES,M 100-J-1/10
R2539	ERJ6GEYJ562	RES,M 5.6K-J-1/10
R2540	ERJ6GEYJ102	RES,M 1K-J-1/10
R2541	ERJ6GEYJ562	RES,M 5.6K-J-1/10
R2542	ERJ6GEYJ562	RES,M 5.6K-J-1/10
R2543	ERJ6GEYJ102	RES,M 1K-J-1/10
R2544	ERJ6GEYJ562	RES,M 5.6K-J-1/10
R2545	ERJ6GEYJ563	RES,M 56K-J-1/10
R2546	ERJ6GEYJ393	RES,M 39K-J-1/10
R2547	ERJ6GEYJ101	RES,M 100-J-1/10
R2549	ERJ6GEYJ102	RES,M 1K-J-1/10
R2550	ERJ6GEYJ221	RES,M 220-J-1/10
R2551	ERJ6GEYJ221	RES,M 220-J-1/10
R2552	ERJ6GEYJ221	RES,M 220-J-1/10
R2553	ERJ6GEYJ751	RES,M 750-J-1/10
R2554	ERJ6GEYJ392	RES,M 3.9K-J-1/10
R2555	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R2556	ERJ6ENF1500	RES,M 150-F-1/10
R2557	ERJ6GEYJ221	RES,M 220-J-1/10
R2558	ERJ6GEYJ181	RES,M 180-J-1/10
R2561	ERJ6ENF6802	RES,M 68K-F-1/10W
R2562	ERJ6GEYJ560	RES,M 56-J-1/10
R2563	ERJ6GEYJ560	RES,M 56-J-1/10
R2564	ERJ6ENF2201	RES,M 2.2K-F-1/10
R2566	ERJ6ENF7501	RES,M 7.5K-F-1/10W
R2567	ERJ6ENF1500	RES,M 150-F-1/10
R2569	ERJ6ENF2940	RES,M 294-F-1/10W
R2570	ERJ6ENF3241	RES,M 3.24K-F-1/10
R2571	ERJ6ENF3001	RES,M 3K-F-1/10
R2572	ERJ6GEYJ680	RES,M 68-J-1/10
R2573	ERJ6GEYJ332	RES,M 3.3K-J-1/10
R2574	ERJ6GEYJ560	RES,M 56-J-1/10
R2575	ERJ6GEYJ101	RES,M 100-J-1/10
R2576	ERJ6GEYJ751	RES,M 750-J-1/10
R2578	ERJ6GEYJ393	RES,M 39K-J-1/10
R2579	ERJ6GEYJ393	RES,M 39K-J-1/10
R2580	ERJ6GEYJ393	RES,M 39K-J-1/10
R2581	ERJ6GEYJ393	RES,M 39K-J-1/10
R2582	ERJ6ENF1501	RES,M 1.5K-F-1/10
R2583	ERJ6ENF4301	RES,M 4.3K-F-1/10W
R2601	ERJ6GEYJ473	RES,M 47K-J-1/10
R2602	ERJ6GEYJ274	RES,M 270K-J-1/10
R2603	ERJ6GEYJ101	RES,M 100-J-1/10
R2604	ERJ6GEYJ221	RES,M 220-J-1/10
R2605	ERJ6GEYJ101	RES,M 100-J-1/10
R2609	ERJ6GEYJ221	RES,M 220-J-1/10
R2610	ERJ6GEYJ273	RES,M 27K-J-1/10
R2611	ERJ6GEYJ221	RES,M 220-J-1/10
R2613	ERJ6GEYJ471	RES,M 470-J-1/10
R2614	ERJ6GEYJ100	RES,M 10-J-1/10
R2615	ERJ6GEYJ473	RES,M 47K-J-1/10
R2616	ERJ6GEYJ392	RES,M 3.9K-J-1/10
R2617	ERJ6GEYJ103	RES,M 10K-J-1/10
R2618	ERJ6GEYJ221	RES,M 220-J-1/10
R2619	ERJ6GEYJ560	RES,M 56-J-1/10
R2620	ERJ6GEYJ101	RES,M 100-J-1/10
R2621	ERJ6GEYJ560	RES,M 56-J-1/10
R2622	ERJ6ENF6801	RES,M 6.8K-F-1/10
R2624	ERJ6GEYJ562	RES,M 5.6K-J-1/10
R2625	ERJ6GEYJ560	RES,M 56-J-1/10
R2627	ERJ6GEYJ101	RES,M 100-J-1/10
R2628	ERJ6ENF3901	RES,M 3.9K-F-1/10W
R2630	ERJ6GEYJ223	RES,M 22K-J-1/10
R2631	ERJ6GEYJ101	RES,M 100-J-1/10
R2632	ERJ6GEYJ102	RES,M 1K-J-1/10
R2633	ERJ6GEYJ101	RES,M 100-J-1/10
R2634	ERJ6GEYJ332	RES,M 3.3K-J-1/10
R2635	ERJ6GEYJ101	RES,M 100-J-1/10
R2636	ERJ6GEYJ273	RES,M 27K-J-1/10

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
R2637	ERJ6GEYJ101	RES,M 100-J-1/10
R2638	ERJ6GEYJ101	RES,M 100-J-1/10
R2639	ERJ6GEYJ100	RES,M 10-J-1/10
R2640	ERJ6GEYJ101	RES,M 100-J-1/10
R2641	ERJ6GEYJ103	RES,M 10K-J-1/10
R2642	ERJ6ENF1202	RES,M 12K-F-1/10
R2643	ERJ6GEYJ101	RES,M 100-J-1/10
R2644	ERJ6GEYJ101	RES,M 100-J-1/10
R2645	ERJ6GEYJ471	RES,M 470-J-1/10
R2646	ERJ6GEYJ100	RES,M 10-J-1/10
R2647	ERJ6GEYJ101	RES,M 100-J-1/10
R2648	ERJ6GEYJ562	RES,M 5.6K-J-1/10
R2649	ERJ6GEYJ221	RES,M 220-J-1/10
R2653	ERJ6GEYJ471	RES,M 470-J-1/10
R2654	ERJ6GEYJ103	RES,M 10K-J-1/10
R2655	ERJ6GEYJ221	RES,M 220-J-1/10
R2656	ERJ6GEYJ153V	RES,M 15K-J-1/10
R2657	ERJ6GEYJ560	RES,M 56-J-1/10
R2658	ERJ6GEYJ560	RES,M 56-J-1/10
R2659	ERJ6GEYJ472	RES,M 4.7K-J-1/10
R2660	ERJ6GEYJ472	RES,M 4.7K-J-1/10
R2662	ERJ6GEYJ472	RES,M 4.7K-J-1/10
R2663	ERJ6GEYJ471	RES,M 470-J-1/10
R2664	ERJ6GEYJ103	RES,M 10K-J-1/10
R2665	ERJ6GEYJ101	RES,M 100-J-1/10
R2666	ERJ6GEYJ392	RES,M 3.9K-J-1/10
R2671	ERJ6GEYJ101	RES,M 100-J-1/10
R2701	ERJ6GEYJ393	RES,M 39K-J-1/10
R2702	ERJ6GEYJ393	RES,M 39K-J-1/10
R2703	ERJ6GEYJ560	RES,M 56-J-1/10
R2704	ERJ6GEYJ560	RES,M 56-J-1/10
R2705	ERJ6GEYJ393	RES,M 39K-J-1/10
R2706	ERJ6GEYJ393	RES,M 39K-J-1/10
R2707	ERJ6GEYJ393	RES,M 39K-J-1/10
R2708	ERJ6GEYJ393	RES,M 39K-J-1/10
R2710	ERJ6GEYJ331	RES,M 330-J-1/10
R2711	ERJ6GEYJ331	RES,M 330-J-1/10
R2712	ERJ6GEYJ560	RES,M 56-J-1/10
R2713	ERJ6GEYJ560	RES,M 56-J-1/10
R2714	ERJ6GEYJ393	RES,M 39K-J-1/10
R2716	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R2717	ERJ6GEYJ562	RES,M 5.6K-J-1/10
R2718	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R2719	ERJ6GEYJ331	RES,M 330-J-1/10
R2720	ERJ6GEYJ183	RES,M 18K-J-1/10
R2801	**ERC12ZGM825**	**RES,S 8.2MEG-M-1/2**
R2858	ERJ6GEYJ471	RES,M 470-J-1/10
R2859	ERDS2TJ223	RES,C 22K-J-1/4
R2860	ERJ6GEYJ561	RES,M 560-J-1/10
R2861	ERJ6GEYJ103	RES,M 10K-J-1/10
R2862	ERJ6GEYJ471	RES,M 470-J-1/10

REF NO.	PART NO.	DESCRIPTION
R2865	ERJ6GEYJ561	RES,M 560-J-1/10
R2871	ERJ6GEYJ471	RES,M 470-J-1/10
R2872	ERJ6GEYJ103	RES,M 10K-J-1/10
R2873	ERJ6GEYJ471	RES,M 470-J-1/10
R2874	ERJ6GEYJ331	RES,M 330-J-1/10
R2875	ERJ6GEYJ471	RES,M 470-J-1/10
R2876	ERJ6GEYJ221	RES,M 220-J-1/10
R2877	ERJ6GEYJ221	RES,M 220-J-1/10
R2879	ERJ6GEYJ221	RES,M 220-J-1/10
R2880	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R2881	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R2882	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R2884	ERJ6GEYJ102	RES,M 1K-J-1/10
R2885	ERJ6GEYJ102	RES,M 1K-J-1/10
R2886	ERJ6GEYJ102	RES,M 1K-J-1/10
R2887	ERJ6GEYJ221	RES,M 220-J-1/10
R2888	ERJ6GEYJ221	RES,M 220-J-1/10
R2889	ERJ6GEYJ221	RES,M 220-J-1/10
R2925	ERDS2TJ273	RES,C 27K-J-1/4
R2926	ERDS2TJ103	RES,C 10K-J-1/4
R2959	ERJ6GEYJ332	RES,M 3.3K-J-1/10
R2960	ERJ6GEYJ332	RES,M 3.3K-J-1/10
R2961	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R2962	ERJ6GEYJ333	RES,M 33K-J-1/10
R2963	ERJ6GEYJ332	RES,M 3.3K-J-1/10
R2964	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R2965	ERJ6GEYJ333	RES,M 33K-J-1/10
R2966	ERJ6GEYJ332	RES,M 3.3K-J-1/10
R2967	ERDS2TJ152	RES,C 1.5K-J-1/4
R2968	ERJ6GEYJ102	RES,M 1K-J-1/10
R2974	ERJ6GEYJ101	RES,M 100-J-1/10
R2975	ERJ6GEYJ102	RES,M 1K-J-1/10
R2977	ERJ6GEYJ682	RES,M 6.8K-J-1/10
R2978	ERJ6GEYJ563	RES,M 56K-J-1/10
R3001	ERJ6GEYJ221	RES,M 220-J-1/10
R3002	ERJ6GEYJ102	RES,M 1K-J-1/10
R3003	ERJ6GEYJ221	RES,M 220-J-1/10
R3004	ERJ6GEYJ102	RES,M 1K-J-1/10
R3005	ERJ6GEYJ221	RES,M 220-J-1/10
R3006	ERJ6GEYJ221	RES,M 220-J-1/10
R3007	ERJ6GEYJ102	RES,M 1K-J-1/10
R3008	ERJ6GEYJ221	RES,M 220-J-1/10
R3009	ERJ6GEYJ102	RES,M 1K-J-1/10
R3010	ERJ6GEYJ221	RES,M 220-J-1/10
R3011	ERJ6GEYJ221	RES,M 220-J-1/10
R3012	ERJ6GEYJ102	RES,M 1K-J-1/10
R3013	ERJ6GEYJ221	RES,M 220-J-1/10
R3014	ERJ6GEYJ102	RES,M 1K-J-1/10
R3015	ERJ6GEYJ221	RES,M 220-J-1/10
R3016	ERJ6GEYJ221	RES,M 220-J-1/10
R3017	ERJ6GEYJ102	RES,M 1K-J-1/10

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
R3019	ERJ6GEYJ102	RES,M 1K-J-1/10
R3021	ERJ6GEYJ221	RES,M 220-J-1/10
R3022	ERJ6GEYJ221	RES,M 220-J-1/10
R3023	ERJ6GEYJ102	RES,M 1K-J-1/10
R3024	ERJ6GEYJ221	RES,M 220-J-1/10
R3025	ERJ6GEYJ102	RES,M 1K-J-1/10
R3026	ERJ6GEYJ102	RES,M 1K-J-1/10
R3027	ERJ6GEYJ221	RES,M 220-J-1/10
R3028	ERJ6GEYJ102	RES,M 1K-J-1/10
R3029	ERJ6GEYJ101	RES,M 100-J-1/10
R3031	ERJ6GEYJ471	RES,M 470-J-1/10
R3033	ERJ6GEYJ681	RES,M 680-J-1/10
R3034	ERJ6GEYJ471	RES,M 470-J-1/10
R3036	ERJ6GEYJ681	RES,M 680-J-1/10
R3037	ERJ6ENF75R0	RES,M 75.0-F-1/10W
R3038	ERJ6ENF75R0	RES,M 75.0-F-1/10W
R3039	ERJ6GEYJ750	RES,M 75-J-1/10
R3040	ERJ6GEYJ184	RES,M 180K-J-1/10
R3041	ERJ6ENF1803	RES,M 180K-F-1/10W
R3042	ERJ6ENF75R0	RES,M 75.0-F-1/10W
R3043	ERJ6GEYJ750	RES,M 75-J-1/10
R3044	ERJ6GEYJ750	RES,M 75-J-1/10
R3045	ERJ6GEYJ184	RES,M 180K-J-1/10
R3046	ERJ6GEYJ184	RES,M 180K-J-1/10
R3057	ERJ6GEYJ471	RES,M 470-J-1/10
R3058	ERJ6GEYJ681	RES,M 680-J-1/10
R3059	ERJ6GEYJ331	RES,M 330-J-1/10
R3060	ERJ6GEYJ471	RES,M 470-J-1/10
R3061	ERJ6GEYJ331	RES,M 330-J-1/10
R3065	ERJ6GEYJ680	RES,M 68-J-1/10
R3067	ERJ6GEYJ151	RES,M 150-J-1/10
R3068	ERJ6GEYJ151	RES,M 150-J-1/10
R3069	ERJ6GEYJ151	RES,M 150-J-1/10
R3070	ERJ6GEYJ151	RES,M 150-J-1/10
R3073	ERJ6GEYJ103	RES,M 10K-J-1/10
R3075	ERJ6GEYJ184	RES,M 180K-J-1/10
R3076	ERJ6GEYJ184	RES,M 180K-J-1/10
R3079	ERJ6GEYJ103	RES,M 10K-J-1/10
R3081	ERJ6GEYJ184	RES,M 180K-J-1/10
R3082	ERJ6GEYJ184	RES,M 180K-J-1/10
R3084	ERJ6GEYJ151	RES,M 150-J-1/10
R3085	ERJ6GEYJ151	RES,M 150-J-1/10
R3087	ERJ6GEYJ184	RES,M 180K-J-1/10
R3088	ERJ6GEYJ184	RES,M 180K-J-1/10
R3115	ERJ6GEYJ153	RES,M 15K-J-1/10
R3116	ERJ6GEYJ562	RES,M 5.6K-J-1/10
R3117	ERJ6GEYJ471	RES,M 470-J-1/10
R3118	ERJ6GEYJ471	RES,M 470-J-1/10
R3119	ERJ6GEYJ153	RES,M 15K-J-1/10
R3121	ERJ6GEYJ471	RES,M 470-J-1/10
R3122	ERJ6GEYJ471	RES,M 470-J-1/10
R3124	ERJ6GEYJ471	RES,M 470-J-1/10
R3126	ERJ6GEYJ561	RES,M 560-J-1/10
R3127	ERJ6GEYJ471	RES,M 470-J-1/10
R3128	ERJ6ENF5100	RES,M 510-F-1/10W
R3129	ERJ6GEYJ471	RES,M 470-J-1/10
R3130	ERJ6ENF4700	RES,M 470-F-1/10W
R3131	ERJ6GEYJ220	RES,M 22-J-1/10
R3132	ERJ6GEYJ223	RES,M 22K-J-1/10
R3133	ERJ6GEYJ103	RES,M 10K-J-1/10
R3134	ERJ6GEYJ102	RES,M 1K-J-1/10
R3136	ERJ6GEYJ102	RES,M 1K-J-1/10
R3137	ERJ6GEYJ333	RES,M 33K-J-1/10
R3139	ERJ6GEYJ333	RES,M 33K-J-1/10
R3140	ERJ6GEYJ821	RES,M 820-J-1/10
R3141	ERJ6GEYJ821	RES,M 820-J-1/10
R3142	ERJ6GEYJ821	RES,M 820-J-1/10
R3143	ERJ6GEYJ821	RES,M 820-J-1/10
R3145	ERJ6GEYJ821	RES,M 820-J-1/10
R3146	ERJ6GEYJ821	RES,M 820-J-1/10
R3148	ERJ6GEYJ471	RES,M 470-J-1/10
R3150	ERJ6GEYJ471	RES,M 470-J-1/10
R3151	ERJ6GEYJ471	RES,M 470-J-1/10
R3153	ERJ6GEYJ102	RES,M 1K-J-1/10
R3154	ERJ6GEYJ102	RES,M 1K-J-1/10
R3155	ERJ6GEYJ273	RES,M 27K-J-1/10
R3156	ERJ6GEYJ102	RES,M 1K-J-1/10
R3161	ERJ6GEYJ183	RES,M 18K-J-1/10
R3163	ERJ6GEYJ680	RES,M 68-J-1/10
R3164	ERJ6GEYJ331	RES,M 330-J-1/10
R3165	ERJ6GEYJ102	RES,M 1K-J-1/10
R3166	ERJ6GEYJ561	RES,M 560-J-1/10
R3167	ERJ6GEYJ102	RES,M 1K-J-1/10
R3168	ERJ6GEYJ273	RES,M 27K-J-1/10
R3169	ERJ6GEYJ123	RES,M 12K-J-1/10
R3170	ERJ6GEYJ102	RES,M 1K-J-1/10
R3171	ERJ6GEYJ331	RES,M 330-J-1/10
R3172	ERJ6ENF3300	RES,M 330-F-1/10
R3173	ERJ6GEYJ681	RES,M 680-J-1/10
R3174	ERJ6GEYJ681	RES,M 680-J-1/10
R3175	ERJ6GEYJ273	RES,M 27K-J-1/10
R3176	ERJ6GEYJ123	RES,M 12K-J-1/10
R3177	ERJ6GEYJ561	RES,M 560-J-1/10
R3178	ERJ6GEYJ102	RES,M 1K-J-1/10
R3179	ERJ6ENF1001	RES,M 1K-F-1/10
R3181	ERJ6ENF4700	RES,M 470-F-1/10W
R3184	ERJ6GEYJ221	RES,M 220-J-1/10
R3185	ERJ6GEYJ561	RES,M 560-J-1/10
R3186	ERJ6GEYJ681	RES,M 680-J-1/10
R3187	ERJ6ENF1001	RES,M 1K-F-1/10
R3188	ERJ6GEYJ471	RES,M 470-J-1/10
R3189	ERJ6ENF4700	RES,M 470-F-1/10W

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
R3191	ERJ6GEYJ221	RES,M 220-J-1/10
R3192	ERJ6GEYJ561	RES,M 560-J-1/10
R3193	ERJ6GEYJ471	RES,M 470-J-1/10
R3194	ERJ6ENF1101	RES,M 1.1K-F-1/10
R3195	ERJ6GEYJ272	RES,M 2.7K-J-1/10
R3196	ERJ6ENF4700	RES,M 470-F-1/10W
R3197	ERJ6GEYJ220	RES,M 22-J-1/10
R3198	ERJ6GEYJ223	RES,M 22K-J-1/10
R3199	ERJ6GEYJ103	RES,M 10K-J-1/10
R3200	ERJ6GEYJ681	RES,M 680-J-1/10
R3201	ERJ6GEYJ102	RES,M 1K-J-1/10
R3202	ERJ6ENF1001	RES,M 1K-F-1/10
R3203	ERJ6GEYJ331	RES,M 330-J-1/10
R3204	ERJ6ENF4700	RES,M 470-F-1/10W
R3207	ERJ6GEYJ102	RES,M 1K-J-1/10
R3208	ERJ6GEYJ681	RES,M 680-J-1/10
R3209	ERJ6GEYJ102	RES,M 1K-J-1/10
R3210	ERJ6ENF1001	RES,M 1K-F-1/10
R3211	ERJ6GEYJ331	RES,M 330-J-1/10
R3212	ERJ6ENF4700	RES,M 470-F-1/10W
R3215	ERJ6GEYJ102	RES,M 1K-J-1/10
R3216	ERJ6GEYJ331	RES,M 330-J-1/10
R3218	ERJ6GEYJ181	RES,M 180-J-1/10
R3219	ERJ6GEYJ393	RES,M 39K-J-1/10
R3220	ERJ6GEYJ331	RES,M 330-J-1/10
R3221	ERJ6GEYJ152	RES,M 1.5K-J-1/10
R3222	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R3223	ERJ6GEYJ272	RES,M 2.7K-J-1/10
R3224	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R3225	ERJ6GEYJ105	RES,M 1.0MEG-J-1/10
R3226	ERJ6GEYJ105	RES,M 1.0MEG-J-1/10
R3227	ERJ6GEYJ513	RES,M 51K-J-1/10
R3228	ERJ6GEYJ303	RES,M 30K-J-1/10
R3230	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R3231	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R3232	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R3236	ERJ6GEYJ471	RES,M 470-J-1/10
R3243	ERJ6GEYJ681	RES,M 680-J-1/10
R3252	ERJ6GEYJ331	RES,M 330-J-1/10
R3253	ERJ6GEYJ331	RES,M 330-J-1/10
R3254	ERJ6GEYJ471	RES,M 470-J-1/10
R3255	ERJ6GEYJ471	RES,M 470-J-1/10
R3256	ERJ6GEYJ221	RES,M 220-J-1/10
R3257	ERJ6GEYJ221	RES,M 220-J-1/10
R3258	ERJ6GEYJ683	RES,M 68K-J-1/10
R3259	ERJ6GEYJ683	RES,M 68K-J-1/10
R3260	ERJ6GEYJ683	RES,M 68K-J-1/10
R3261	ERJ6GEYJ683	RES,M 68K-J-1/10
R3263	ERJ6GEYJ471	RES,M 470-J-1/10
R3264	ERJ6GEYJ471	RES,M 470-J-1/10
R3265	ERJ6GEYJ471	RES,M 470-J-1/10
R3267	ERJ6GEYJ102	RES,M 1K-J-1/10
R3268	ERJ6GEYJ333	RES,M 33K-J-1/10
R3277	ERJ6GEYJ153	RES,M 15K-J-1/10
R3280	ERJ6GEYJ562	RES,M 5.6K-J-1/10
R3281	ERJ6GEYJ471	RES,M 470-J-1/10
R3285	ERJ6GEYJ471	RES,M 470-J-1/10
R3287	ERJ6GEYJ153	RES,M 15K-J-1/10
R3290	ERJ6GEYJ562	RES,M 5.6K-J-1/10
R3292	ERJ6GEYJ562	RES,M 5.6K-J-1/10
R3298	ERJ6GEYJ471	RES,M 470-J-1/10
R3355	ERDS2TJ392	RES,C 3.9K-J-1/4
R3356	ERDS2TJ822	RES,C 8.2K-J-1/4
R3357	ERDS2TJ392	RES,C 3.9K-J-1/4
R3365	ERDS2TJ392	RES,C 3.9K-J-1/4
R3366	ERDS2TJ822	RES,C 8.2K-J-1/4
R3367	ERDS2TJ392	RES,C 3.9K-J-1/4
R3375	ERDS2TJ392	RES,C 3.9K-J-1/4
R3376	ERDS2TJ822	RES,C 8.2K-J-1/4
R3377	ERDS2TJ392	RES,C 3.9K-J-1/4
R5210	ERJ6GEYJ332	RES,M 3.3K-J-1/10
R5211	ERJ6GEYJ560	RES,M 56-J-1/10
R5212	ERJ6GEYJ560	RES,M 56-J-1/10
R5223	ERJ6GEYJ392	RES,M 3.9K-J-1/10
R5224	ERJ6GEYJ101	RES,M 100-J-1/10
R5225	ERJ6GEYJ331	RES,M 330-J-1/10
R5227	ERJ6GEYJ220	RES,M 22-J-1/10
R5228	ERJ6GEYJ220	RES,M 22-J-1/10
R5229	ERJ6GEYJ334	RES,M 330K-J-1/10
R5233	ERJ6GEYJ153	RES,M 15K-J-1/10
R5235	ERJ6GEYJ331	RES,M 330-J-1/10
R5237	ERJ6GEYJ822	RES,M 8.2K-J-1/10
R5241	ERJ6GEYJ103	RES,M 10K-J-1/10
R5243	ERJ6GEYJ272	RES,M 2.7K-J-1/10
R5250	ERJ6GEYJ223	RES,M 22K-J-1/10
R5251	ERJ6GEYJ683	RES,M 68K-J-1/10
R5252	ERJ6GEYJ153	RES,M 15K-J-1/10
R5253	ERJ6GEYJ223	RES,M 22K-J-1/10
R5254	ERJ6GEYJ683	RES,M 68K-J-1/10
R5255	ERJ6GEYJ153	RES,M 15K-J-1/10
R5264	ERJ6GEYJ271	RES,M 270-J-1/10
R5266	ERJ6GEYJ271	RES,M 270-J-1/10
R5267	ERJ6GEYJ271	RES,M 270-J-1/10
R5270	ERJ6GEYJ223	RES,M 22K-J-1/10
R5271	ERJ6GEYJ223	RES,M 22K-J-1/10
R5272	ERJ6GEYJ103	RES,M 10K-J-1/10
R5273	ERJ6GEYJ153	RES,M 15K-J-1/10
R5277	ERJ6GEYJ152	RES,M 1.5K-J-1/10
R5278	ERJ6GEYJ472	RES,M 4.7K-J-1/10
R5279	ERJ6GEYJ472	RES,M 4.7K-J-1/10
R5293	ERJ6GEYJ271	RES,M 270-J-1/10
R5298	ERJ6GEYJ222	RES,M 2.2K-J-1/10

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
R5299	ERJ6GEYJ223	RES,M 22K-J-1/10
R5300	ERJ6GEYJ243	RES,M 24K-J-1/10
R5308	ERJ6GEYJ101	RES,M 100-J-1/10
R5310	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R5317	ERJ6GEYJ331	RES,M 330-J-1/10
R5328	ERJ6ENF1002	RES,M 10K-F-1/10
R5333	ERJ6ENF1001	RES,M 1K-F-1/10
R5334	ERJ6GEYJ682	RES,M 6.8K-J-1/10
R5336	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R5338	ERJ6GEYJ271	RES,M 270-J-1/10
R5339	ERJ6GEYJ331	RES,M 330-J-1/10
R5340	ERJ6ENF1001	RES,M 1K-F-1/10
R5341	ERJ6GEYJ102	RES,M 1K-J-1/10
R5342	ERJ6GEYJ562	RES,M 5.6K-J-1/10
R5343	ERJ6GEYJ563	RES,M 56K-J-1/10
R5344	ERJ6GEYJ333	RES,M 33K-J-1/10
R5345	ERJ6GEYJ271	RES,M 270-J-1/10
R5346	ERJ6GEYJ563	RES,M 56K-J-1/10
R5347	ERJ6GEYJ333	RES,M 33K-J-1/10
R5348	ERJ6GEYJ103	RES,M 10K-J-1/10
R5349	ERJ6GEYJ391	RES,M 390-J-1/10
R5351	ERJ6ENF1001	RES,M 1K-F-1/10
R5352	ERJ6GEYJ102	RES,M 1K-J-1/10
R5353	ERJ6ENF1001	RES,M 1K-F-1/10
R5354	ERJ6GEYJ102	RES,M 1K-J-1/10
R5355	ERJ6GEYJ103	RES,M 10K-J-1/10
R5358	ERJ6ENF2700	RES,M 270-F-1/10W
R5359	ERJ6ENF2000	RES,M 200-F-1/10W
R5360	ERJ6ENF1201	RES,M 1.2K-F-1/10
R5361	ERJ6GEYJ332	RES,M 3.3K-J-1/10
R5363	ERJ6GEYJ221	RES,M 220-J-1/10
R5364	ERJ6ENF8200	RES,M 820-F-1/10
R5365	ERJ6GEYJ102	RES,M 1K-J-1/10
R5366	ERJ6GEYJ102	RES,M 1K-J-1/10
R5367	ERJ6GEYJ271	RES,M 270-J-1/10
R5368	ERJ6GEYJ102	RES,M 1K-J-1/10
R5369	ERJ6GEYJ563	RES,M 56K-J-1/10
R5370	ERJ6GEYJ333	RES,M 33K-J-1/10
R5371	ERJ6GEYJ562	RES,M 5.6K-J-1/10
R5372	ERJ6GEYJ332	RES,M 3.3K-J-1/10
R5373	ERJ6GEYJ472	RES,M 4.7K-J-1/10
R5374	ERJ6GEYJ331	RES,M 330-J-1/10
R5376	ERJ6GEYJ563	RES,M 56K-J-1/10
R5377	ERJ6GEYJ333	RES,M 33K-J-1/10
R5378	ERJ6GEYJ122	RES,M 1.2K-J-1/10
R5379	ERJ6GEYJ102	RES,M 1K-J-1/10
R5380	ERJ6ENF1002	RES,M 10K-F-1/10
R5381	ERJ6ENF2611	RES,M 2.61K-F-1/10W
R5382	ERJ6GEYJ822	RES,M 8.2K-J-1/10
R5384	ERJ6GEYJ271	RES,M 270-J-1/10
R5385	ERJ6GEYJ271	RES,M 270-J-1/10

REF NO.	PART NO.	DESCRIPTION
R5386	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R5387	ERJ6ENF4700	RES,M 470-F-1/10W
R5388	ERJ6GEYJ271	RES,M 270-J-1/10
R5390	ERJ6GEYJ102	RES,M 1K-J-1/10
R5391	ERJ6ENF1051	RES,M 1.05K-F-1/10W
R5395	ERJ6ENF7500	RES,M 750-F-1/10W
R5396	ERJ6GEYJ271	RES,M 270-J-1/10
R5397	ERJ6GEYJ561	RES,M 560-J-1/10
R5399	ERJ6GEYJ100	RES,M 10-J-1/10
R5404	ERJ6GEYJ330	RES,M 33-J-1/10
R5414	ERJ6GEYJ330	RES,M 33-J-1/10
R5418	ERJ6GEYJ182	RES,M 1.8K-J-1/10
R5419	ERJ6GEYJ182	RES,M 1.8K-J-1/10
R5420	ERJ6GEYJ220	RES,M 22-J-1/10
R5421	ERJ6GEYJ220	RES,M 22-J-1/10
R5422	ERJ6GEYJ220	RES,M 22-J-1/10
R5425	ERJ6GEYJ471	RES,M 470-J-1/10
R5426	ERJ6GEYJ471	RES,M 470-J-1/10
R5427	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R5428	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R5429	ERJ6GEYJ331	RES,M 330-J-1/10
R5435	ERJ6GEYJ331	RES,M 330-J-1/10
R5459	ERJ6GEYJ103	RES,M 10K-J-1/10
R5460	ERJ6GEYJ103	RES,M 10K-J-1/10
R5550	ERJ3GEYJ152	RES,M 1.5K-J-1/32W
R5551	ERJ3GEYJ222	RES,M 2.2K-J-1/32W
R5552	ERJ3GEYJ152	RES,M 1.5K-J-1/32W
R5553	ERJ3GEYJ224	RES,M 220K-J-1/32W
R5554	ERJ3GEYJ271	RES,M 270-J-1/32W
R5555	ERJ3GEYJ102	RES,M 1K-J-1/32W
R5556	ERJ3GEYJ102	RES,M 1K-J-1/32W
R5557	ERJ3GEYJ681	RES,M 680-J-1/32W
R5558	ERJ3GEYJ392	RES,M 2.9K-J-1/32W
R5559	ERJ3GEYJ103	RES,M 10K-J-1/32W
R5561	ERJ3GEYJ101	RES,M 100-J-1/32W
R5562	ERJ3GEYJ560	RES,M 56-J-1/32W
R5563	ERJ3GEYJ560	RES,M 56-J-1/32W
R5564	ERJ3GEYJ560	RES,M 56-J-1/32W
R5565	ERJ3GEYJ560	RES,M 56-J-1/32W
R5566	ERJ3GEYJ472	RES,M 4.7K-J-1/32W
R5567	ERJ3GEYJ472	RES,M 4.7K-J-1/32W
R5568	ERJ3GEYJ472	RES,M 4.7K-J-1/32W
R5569	ERJ3GEYJ102	RES,M 1K-J-1/32W
R5570	ERJ3GEYJ103	RES,M 10K-J-1/32W
R5572	ERJ3GEYJ103	RES,M 10K-J-1/32W
R5573	ERJ3GEYJ103	RES,M 10K-J-1/32W
R5574	ERJ3GEY0R00	RES, JUMPER
R5575	ERJ3GEYJ102	RES,M 1K-J-1/32W
R5576	ERJ3GEYJ331	RES,M 330-J-1/32W
R5577	ERJ3GEYJ102	RES,M 1K-J-1/32W
R5578	ERJ3GEYJ121	RES,M 120-J-1/32W

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
R5579	ERJ3GEYJ680	RES,M 68-J-1/32W
R5580	ERJ3GEYJ331	RES,M 330-J-1/32W
R5582	ERJ3GEYJ393	RES,M 39K-J-1/32W
R5583	ERJ3GEYJ332	RES,M 3.3K-J-1/32W
R5584	ERJ3GEYJ222	RES,M 2.2K-J-1/32W
R5585	ERJ3GEYJ102	RES,M 1K-J-1/32W
R5586	ERJ3GEYJ472	RES,M 4.7K-J-1/32W
R5601	ERJ3GEYJ121	RES,M 120-J-1/32W
R5604	ERJ3GEYJ472	RES,M 4.7K-J-1/32W
R5605	ERJ3GEYJ471	RES,M 470-J-1/32W
R5606	ERJ3GEYJ560	RES,M 56-J-1/32W
R5607	ERJ3GEYJ302	RES,M 3K-J-1/32W
R5608	ERJ3GEYJ681	RES,M 680-J-1/32W
R5609	ERJ3GEYJ102	RES,M 1K-J-1/32W
R5610	ERJ3GEYJ393	RES,M 39K-J-1/32W
R5611	ERJ3GEYJ560	RES,M 56-J-1/32W
R5612	ERJ3GEYJ560	RES,M 56-J-1/32W
R5613	ERJ3GEYJ560	RES,M 56-J-1/32W
R5614	ERJ3GEYJ560	RES,M 56-J-1/32W
R5615	ERJ3GEYJ560	RES,M 56-J-1/32W
R5616	ERJ3GEYJ560	RES,M 56-J-1/32W
R5617	ERJ3GEYJ560	RES,M 56-J-1/32W
R5618	ERJ3GEYJ332	RES,M 3.3K-J-1/32W
R5619	ERJ3GEYJ222	RES,M 2.2K-J-1/32W
R5620	ERJ3GEYJ101	RES,M 100-J-1/32W
R5621	ERJ3GEYJ223	RES,M 22K-J-1/32W
R5622	ERJ3GEYJ331	RES,M 330-J-1/32W
R5623	ERJ3GEYJ560	RES,M 56-J-1/32W
R5624	ERJ3GEYJ223	RES,M 22K-J-1/32W
R5626	ERJ3GEYJ682	RES,M 6.8K-J-1/32W
R5627	ERJ3GEYJ333	RES,M 33K-J-1/32W
R5628	ERJ3GEYJ472	RES,M 4.7K-J-1/32W
R5629	ERJ3GEYJ392	RES,M 2.9K-J-1/32W
R5630	ERJ3GEYJ392	RES,M 2.9K-J-1/32W
R5631	ERJ3GEYJ201	RES,M 200-J-1/32W
R5632	ERJ3GEYJ102	RES,M 1K-J-1/32W
R5633	ERJ3GEYJ223	RES,M 22K-J-1/32W
R5634	ERJ3GEYJ223	RES,M 22K-J-1/32W
R5635	ERJ3GEY0R00	RES, JUMPER
R5636	ERJ3GEYJ223	RES,M 22K-J-1/32W
R5638	ERJ3GEYJ560	RES,M 56-J-1/32W
R5639	ERJ3GEYJ202	RES,M 2K-J-1/32W
R5640	ERJ3GEYJ153	RES,M 15K-J-1/32W
R5641	ERJ3GEYJ101	RES,M 100-J-1/32W
R5642	ERJ3GEYJ391	RES,M 390-J-1/32W
R5643	ERJ3GEYJ330	RES,M 33-J-1/32W
R5644	ERJ3GEYJ101	RES,M 100-J-1/32W
R5645	ERJ3GEYJ751	RES,M 750-J-1/32W
R5646	ERJ6ENF9530	RES,M 953-F-1/10W
R5647	ERJ6ENF2201	RES,M 2.2K-F-1/10
R5648	ERJ3GEYJ221	RES,M 220-J-1/32W

REF NO.	PART NO.	DESCRIPTION
R5652	ERJ3GEYJ182	RES,M 1.8K-J-1/32W
R5653	ERJ6ENF2672	RES,M 26.7K-F-1/10W
R5654	ERJ3GEYJ103	RES,M 10K-J-1/32W
R5655	ERJ3GEYJ122	RES,M 1.2K-J-1/32W
R5656	ERJ3GEYJ103	RES,M 10K-J-1/32W
R5657	ERJ3GEYJ122	RES,M 1.2K-J-1/32W
R5658	ERJ3GEYJ103	RES,M 10K-J-1/32W
R5660	ERJ3GEYJ122	RES,M 1.2K-J-1/32W
R5661	ERJ3GEYJ103	RES,M 10K-J-1/32W
R5662	ERJ3GEYJ103	RES,M 10K-J-1/32W
R5663	ERJ3GEYJ102	RES,M 1K-J-1/32W
R5664	ERJ3GEYJ560	RES,M 56-J-1/32W
R5665	ERJ3GEYJ101	RES,M 100-J-1/32W
R5666	ERJ3GEYJ203	RES,M 20K-J-1/32W
R5667	ERJ3GEY0R00	RES, JUMPER
R5674	ERJ3GEYJ103	RES,M 10K-J-1/32W
R5675	ERJ3GEYJ103	RES,M 10K-J-1/32W
R5676	ERJ3GEYJ103	RES,M 10K-J-1/32W
R5677	ERJ3GEYJ472	RES,M 4.7K-J-1/32W
R5702	ERJ3GEYJ560	RES,M 56-J-1/32W
R5703	ERJ3GEYJ560	RES,M 56-J-1/32W
R5704	ERJ3GEYJ220	RES,M 22-J-1/32W
R5706	ERJ3GEYJ181	RES,M 180-J-1/32W
R5707	ERJ3GEYJ181	RES,M 180-J-1/32W
R5708	ERJ3GEYJ181	RES,M 180-J-1/32W
R5709	ERJ3GEYJ102	RES,M 1K-J-1/32W
R5710	ERJ3GEYJ102	RES,M 1K-J-1/32W
R5711	ERJ3GEYJ102	RES,M 1K-J-1/32W
R5712	ERJ3GEYJ101	RES,M 100-J-1/32W
R5713	ERJ6ENF9100	RES,M 910-F-1/10W
R5714	ERJ3GEYJ101	RES,M 100-J-1/32W
R5715	ERJ6ENF9100	RES,M 910-F-1/10W
R5716	ERJ3GEYJ101	RES,M 100-J-1/32W
R5717	ERJ6ENF9100	RES,M 910-F-1/10W
R5718	ERJ3GEYJ102	RES,M 1K-J-1/32W
R5719	ERJ6ENF1101	RES,M 1.1K-F-1/10
R5720	ERJ3GEYJ102	RES,M 1K-J-1/32W
R5721	ERJ6ENF1101	RES,M 1.1K-F-1/10
R5722	ERJ3GEYJ102	RES,M 1K-J-1/32W
R5723	ERJ6ENF1101	RES,M 1.1K-F-1/10
R5724	ERJ3GEYJ560	RES,M 56-J-1/32W
R5727	ERJ3GEYJ271	RES,M 270-J-1/32W
R5728	ERJ3GEYJ560	RES,M 56-J-1/32W
R5729	ERJ3GEY0R00	RES, JUMPER
R5730	ERJ3GEYJ271	RES,M 270-J-1/32W
R5731	ERJ3GEYJ271	RES,M 270-J-1/32W
R5733	ERJ3GEYJ103	RES,M 10K-J-1/32W
R5734	ERJ6ENF3301	RES,M 3.3K-F-1/10
R5735	ERJ6ENF6800	RES,M 680-F-1/10
R5736	ERJ3GEYJ103	RES,M 10K-J-1/32W
R5737	ERJ3GEYJ103	RES,M 10K-J-1/32W

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
R5738	ERJ6ENF1500	RES,M 150-F-1/10
R5739	ERJ6ENF1500	RES,M 150-F-1/10
R5740	ERJ6ENF1500	RES,M 150-F-1/10
R5741	ERJ6ENF1500	RES,M 150-F-1/10
R5742	ERJ6ENF5600	RES,M 560-F-1/10W
R5743	ERJ6ENF1500	RES,M 150-F-1/10
R5744	ERJ6ENF1001	RES,M 1K-F-1/10
R5745	ERJ3GEYJ560	RES,M 56-J-1/32W
R5746	ERJ3GEYJ560	RES,M 56-J-1/32W
R5747	ERJ3GEY0R00	RES, JUMPER
R5748	ERJ6ENF2200	RES,M 220-F-1/10W
R5749	ERJ6ENF1150	RES,M 115-F-1/10W
R5750	ERJ6ENF1001	RES,M 1K-F-1/10
R5751	ERJ6ENF5600	RES,M 560-F-1/10W
R5752	ERJ3GEYJ272	RES,M 2.7K-J-1/32W
R5753	ERJ3GEY0R00	RES, JUMPER
R5754	ERJ3GEYJ560	RES,M 56-J-1/32W
R5755	ERJ3GEYJ101	RES,M 100-J-1/32W
R5756	ERJ3GEYJ101	RES,M 100-J-1/32W
R5757	ERJ3GEYJ102	RES,M 1K-J-1/32W
R5758	ERJ3GEYJ102	RES,M 1K-J-1/32W
R5759	ERJ3GEYJ560	RES,M 56-J-1/32W
R5760	ERJ3GEYJ220	RES,M 22-J-1/32W
R5761	ERJ3GEYJ560	RES,M 56-J-1/32W
R5762	ERJ3GEYJ102	RES,M 1K-J-1/32W
R5764	ERJ3GEYJ560	RES,M 56-J-1/32W
R5765	ERJ3GEY0R00	RES, JUMPER
R5767	ERJ6ENF3302	RES,M 33K-F-1/10
R5768	ERJ6ENF2701	RES,M 2.7K-F-1/10
R5769	ERJ6ENF2700	RES,M 270-F-1/10W
R5770	ERJ3GEYJ105	RES,M 1MEG-J-1/32W
R5777	ERJ3GEYJ331	RES,M 330-J-1/32W
R5778	ERJ3GEYJ331	RES,M 330-J-1/32W
R5779	ERJ3GEYJ331	RES,M 330-J-1/32W
R5780	ERJ3GEYJ560	RES,M 56-J-1/32W
R5781	ERJ3GEYJ560	RES,M 56-J-1/32W
R5782	ERJ3GEYJ102	RES,M 1K-J-1/32W
R5783	ERJ3GEYJ102	RES,M 1K-J-1/32W
R5784	ERJ3GEYJ102	RES,M 1K-J-1/32W
R5785	ERJ3GEYJ561	RES,M 560-J-1/32W
R5786	ERJ3GEYJ561	RES,M 560-J-1/32W
R5787	ERJ3GEYJ561	RES,M 560-J-1/32W
R5788	ERJ6ENF8200	RES,M 820-F-1/10
R5789	ERJ3GEY0R00	RES, JUMPER
R5790	ERJ6ENF1000	RES,M 100-F-1/10
R5791	ERJ3GEYJ103	RES,M 10K-J-1/32W
R5792	ERJ3GEYJ103	RES,M 10K-J-1/32W
R5793	ERJ3GEYJ103	RES,M 10K-J-1/32W
R5794	ERJ3GEYJ103	RES,M 10K-J-1/32W
R5795	ERJ3GEYJ103	RES,M 10K-J-1/32W
R5796	ERJ3GEYJ103	RES,M 10K-J-1/32W

REF NO.	PART NO.	DESCRIPTION
R5797	ERJ3GEYJ103	RES,M 10K-J-1/32W
R5798	ERJ3GEYJ103	RES,M 10K-J-1/32W
R5799	ERJ3GEYJ103	RES,M 10K-J-1/32W
R5800	ERJ6ENF1000	RES,M 100-F-1/10
R5804	ERJ6ENF6800	RES,M 680-F-1/10
R5807	ERJ3GEYJ102	RES,M 1K-J-1/32W
R5808	ERJ3GEYJ560	RES,M 56-J-1/32W
R5813	ERJ3GEYJ333	RES,M 33K-J-1/32W
R5814	ERJ3GEYJ331	RES,M 330-J-1/32W
R5815	ERJ6ENF3600	RES,M 360-F-1/10W
R5819	ERJ6ENF2610	RES,M 261-F-1/10W
R5822	ERJ6ENF3571	RES,M 3.57K-F-1/10W
R5823	ERJ6ENF2201	RES,M 2.2K-F-1/10
R5824	ERJ6ENF1101	RES,M 1.1K-F-1/10
R5825	ERJ3GEYJ471	RES,M 470-J-1/32W
R5826	ERJ3GEYJ221	RES,M 220-J-1/32W
R5827	ERJ3GEYJ471	RES,M 470-J-1/32W
R5828	ERJ3GEYJ102	RES,M 1K-J-1/32W
R5829	ERJ3GEYJ182	RES,M 1.8K-J-1/32W
R5830	ERJ3GEYJ331	RES,M 330-J-1/32W
R5831	ERJ3GEYJ102	RES,M 1K-J-1/32W
R5833	ERJ3GEYJ273	RES,M 27K-J-1/32W
R5834	ERJ3GEYJ561	RES,M 560-J-1/32W
R5835	ERJ3GEYJ680	RES,M 68-J-1/32W
R5836	ERJ3GEYJ331	RES,M 330-J-1/32W
R5837	ERJ3GEYJ331	RES,M 330-J-1/32W
R5838	ERJ3GEYJ103	RES,M 10K-J-1/32W
R5841	ERJ3GEY0R00	RES, JUMPER
R5842	ERJ3GEYJ222	RES,M 2.2K-J-1/32W
R5843	ERJ3GEYJ103	RES,M 10K-J-1/32W
R5844	ERJ3GEYJ560	RES,M 56-J-1/32W
R5845	ERJ3GEYJ560	RES,M 56-J-1/32W
R5846	ERJ3GEYJ560	RES,M 56-J-1/32W
R5847	ERJ3GEYJ102	RES,M 1K-J-1/32W
R5848	ERJ3GEYJ302	RES,M 3K-J-1/32W
R5849	ERJ3GEYJ333	RES,M 33K-J-1/32W
R5850	ERJ3GEYJ220	RES,M 22-J-1/32W
R5851	ERJ3GEYJ473	RES,M 47K-J-1/32W
R5852	ERJ3GEYJ104	RES,M 100K-J-1/32W
R5853	ERJ3GEYJ103	RES,M 10K-J-1/32W
R5854	ERJ3GEYJ473	RES,M 47K-J-1/32W
R5855	ERJ3GEYJ104	RES,M 100K-J-1/32W
R5856	ERJ3GEYJ103	RES,M 10K-J-1/32W
R5859	ERJ3GEYJ333	RES,M 33K-J-1/32W
R5862	ERJ3GEYJ222	RES,M 2.2K-J-1/32W
R5863	ERJ3GEYJ222	RES,M 2.2K-J-1/32W
R5864	ERJ3GEYJ333	RES,M 33K-J-1/32W
R5866	ERJ3GEYJ105	RES,M 1MEG-J-1/32W
R5867	ERJ3GEYJ220	RES,M 22-J-1/32W
R5868	ERJ3GEYJ333	RES,M 33K-J-1/32W
R5869	ERJ3GEYJ103	RES,M 10K-J-1/32W

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
R5871	ERJ3GEYJ220	RES,M 22-J-1/32W
R5873	ERJ3GEY0R00	RES, JUMPER
R5876	ERJ3GEYJ560	RES,M 56-J-1/32W
R5877	ERJ3GEYJ560	RES,M 56-J-1/32W
R5879	ERJ3GEYJ560	RES,M 56-J-1/32W
R5880	ERJ3GEYJ331	RES,M 330-J-1/32W
R5881	ERJ3GEYJ331	RES,M 330-J-1/32W
R5882	ERJ3GEYJ331	RES,M 330-J-1/32W
R5883	ERJ3GEYJ560	RES,M 56-J-1/32W
R5884	ERJ3GEYJ221	RES,M 220-J-1/32W
R5885	ERJ3GEYJ101	RES,M 100-J-1/32W
R5886	ERJ3GEYJ101	RES,M 100-J-1/32W
R5887	ERJ3GEYJ101	RES,M 100-J-1/32W
R5888	ERJ3GEYJ101	RES,M 100-J-1/32W
R5889	ERJ3GEYJ101	RES,M 100-J-1/32W
R5890	ERJ3GEYJ101	RES,M 100-J-1/32W
R5891	ERJ3GEYJ101	RES,M 100-J-1/32W
R5892	ERJ3GEYJ820	RES,M 82-J-1/32W
R5893	ERJ3GEYJ820	RES,M 82-J-1/32W
R5894	ERJ3GEYJ820	RES,M 82-J-1/32W
R5895	ERJ3GEYJ124	RES,M 120K-J-1/32W
R5896	ERJ3GEYJ393	RES,M 39K-J-1/32W
R5899	ERJ3GEYJ220	RES,M 22-J-1/32W
R5900	ERJ3GEYJ182	RES,M 1.8K-J-1/32W
R5901	ERJ3GEYJ331	RES,M 330-J-1/32W
R5902	ERJ3GEYJ102	RES,M 1K-J-1/32W
R5903	ERJ3GEY0R00	RES, JUMPER
R5904	ERJ3GEY0R00	RES, JUMPER
R5905	ERJ3GEY0R00	RES, JUMPER
R5906	ERJ3GEY0R00	RES, JUMPER
R5907	ERJ3GEY0R00	RES, JUMPER
R5909	ERJ3GEYJ560	RES,M 56-J-1/32W
R5910	ERJ3GEYJ560	RES,M 56-J-1/32W
R5911	ERJ3GEYJ103	RES,M 10K-J-1/32W
R5912	ERJ3GEYJ105	RES,M 1MEG-J-1/32W
R5913	ERJ3GEYJ103	RES,M 10K-J-1/32W
R5914	ERJ3GEY0R00	RES, JUMPER
R5915	ERJ3GEYJ182	RES,M 1.8K-J-1/32W
R5916	ERJ3GEYJ331	RES,M 330-J-1/32W
R5917	ERJ3GEYJ102	RES,M 1K-J-1/32W
R5918	ERJ3GEY0R00	RES, JUMPER
R5921	ERJ3GEYJ821	RES,M 820-J-1/32W
R5922	ERJ3GEYJ821	RES,M 820-J-1/32W
R5923	ERJ3GEYJ821	RES,M 820-J-1/32W
R5924	ERJ3GEYJ821	RES,M 820-J-1/32W
R5925	ERJ3GEYJ821	RES,M 820-J-1/32W
R5926	ERJ3GEYJ821	RES,M 820-J-1/32W
R5927	ERJ6GEYJ471	RES,M 470-J-1/10
R5928	ERJ6GEYJ471	RES,M 470-J-1/10
R5929	ERJ3GEYJ151	RES,M 150-J-1/32W
R5930	ERJ6GEYJ471	RES,M 470-J-1/10
R5931	ERJ6GEYJ471	RES,M 470-J-1/10
R5932	ERJ6GEYJ471	RES,M 470-J-1/10
R5933	ERJ6GEYJ471	RES,M 470-J-1/10
R5934	ERJ3GEY0R00	RES, JUMPER
R5936	ERJ3GEYJ151	RES,M 150-J-1/32W
R5937	ERJ3GEYJ151	RES,M 150-J-1/32W
R5939	ERJ3GEYJ103	RES,M 10K-J-1/32W
R5940	EXB38V330JV	RESISTOR NETWORK
R5941	EXB38V330JV	RESISTOR NETWORK
R5942	EXB38V330JV	RESISTOR NETWORK
R5943	EXB38V330JV	RESISTOR NETWORK
R5944	EXB38V330JV	RESISTOR NETWORK
R5945	ERJ3GEYJ683	RES,M 68K-J-1/32W
R5946	ERJ3GEYJ560	RES,M 56-J-1/32W
R5947	ERJ3GEYJ272	RES,M 2.7K-J-1/32W
R5948	ERJ3GEYJ222	RES,M 2.2K-J-1/32W
R5949	ERJ3GEYJ332	RES,M 3.3K-J-1/32W
R5950	ERJ3GEYJ223	RES,M 22K-J-1/32W
R5951	ERJ3GEYJ683	RES,M 68K-J-1/32W
R5952	EXB38V330JV	RESISTOR NETWORK
R5953	EXB38V330JV	RESISTOR NETWORK
R5959	EXB38V330JV	RESISTOR NETWORK
R5960	ERJ3GEY0R00	RES, JUMPER
R5962	ERJ3GEYJ101	RES,M 100-J-1/32W
R5967	ERJ3GEYJ223	RES,M 22K-J-1/32W
R5968	ERJ3GEYJ102	RES,M 1K-J-1/32W
R5969	ERJ3GEYJ333	RES,M 33K-J-1/32W
R5972	ERJ3GEYJ105	RES,M 1MEG-J-1/32W
R5973	ERJ3GEYJ471	RES,M 470-J-1/32W
R5974	ERJ3GEYJ273	RES,M 27K-J-1/32W
R5975	ERJ3GEYJ223	RES,M 22K-J-1/32W
R5977	ERJ3GEYJ471	RES,M 470-J-1/32W
R5978	ERJ3GEYJ331	RES,M 330-J-1/32W
R5979	ERJ3GEYJ560	RES,M 56-J-1/32W
R5980	ERJ3GEYJ273	RES,M 27K-J-1/32W
R5981	ERJ3GEYJ223	RES,M 22K-J-1/32W
R5986	ERJ3GEYJ102	RES,M 1K-J-1/32W
R5987	ERJ3GEYJ332	RES,M 3.3K-J-1/32W
R5988	ERJ3GEYJ223	RES,M 22K-J-1/32W
R5989	ERJ3GEYJ103	RES,M 10K-J-1/32W
R5990	ERJ3GEYJ103	RES,M 10K-J-1/32W
R5991	ERJ3GEYJ222	RES,M 2.2K-J-1/32W
R5992	ERJ6GEYJ103	RES,M 10K-J-1/10
R5993	ERJ6GEYJ102	RES,M 1K-J-1/10
R5994	ERJ3GEYJ103	RES,M 10K-J-1/32W
R5995	ERJ3GEYJ101	RES,M 100-J-1/32W
R5996	ERJ3GEYJ472	RES,M 4.7K-J-1/32W
R5997	ERJ3GEYJ103	RES,M 10K-J-1/32W
R5998	ERJ3GEYJ103	RES,M 10K-J-1/32W
R7001	ERJ6GEYJ561	RES,M 560-J-1/10
R7002	ERJ6GEYJ561	RES,M 560-J-1/10

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
R7003	ERJ6GEYJ561	RES,M 560-J-1/10
R7004	ERJ6GEYJ561	RES,M 560-J-1/10
R7005	ERJ6GEYJ561	RES,M 560-J-1/10
R7006	ERJ6GEYJ561	RES,M 560-J-1/10
R7007	ERJ6GEYJ273	RES,M 27K-J-1/10
R7008	ERJ6GEYJ273	RES,M 27K-J-1/10
R7009	ERJ6GEYJ472	RES,M 4.7K-J-1/10
R7010	ERJ6GEYJ472	RES,M 4.7K-J-1/10
R7011	ERJ6GEYJ332	RES,M 3.3K-J-1/10
R7012	ERJ6GEYJ332	RES,M 3.3K-J-1/10
R7013	ERJ6GEYJ332	RES,M 3.3K-J-1/10
R7014	ERJ6GEYJ332	RES,M 3.3K-J-1/10
R7015	ERJ6GEYJ332	RES,M 3.3K-J-1/10
R7016	ERJ6GEYJ332	RES,M 3.3K-J-1/10
R7018	ERJ6GEYJ332	RES,M 3.3K-J-1/10
R7019	ERJ6GEYJ332	RES,M 3.3K-J-1/10
R7020	ERJ6GEYJ332	RES,M 3.3K-J-1/10
R7021	ERJ6GEYJ332	RES,M 3.3K-J-1/10
R7022	ERJ6GEYJ332	RES,M 3.3K-J-1/10
R7023	ERJ6GEYJ332	RES,M 3.3K-J-1/10
R7026	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R7027	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R7028	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R7031	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R7032	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R7033	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R7045	ERG2SJ820H	RES,M 82-J-2W
R7046	ERG2SJ121H	RES,M 120-J-2W
R7047	ERG2SJ820H	RES,M 82-J-2W
R7048	ER0S2CKF10R0	RES,M 10K-F-1/4
R7049	ER0S2CKF10R0	RES,M 10K-F-1/4
R7050	ER0S2CKF10R0	RES,M 10K-F-1/4
R7051	ER0S2CKF10R0	RES,M 10K-F-1/4
R7052	ER0S2CKF20R0	RES,M 20.0-F-1/4W
R7053	ER0S2CKF20R0	RES,M 20.0-F-1/4W
R7054	ER0S2CKF20R0	RES,M 20.0-F-1/4W
R7055	ER0S2CKF20R0	RES,M 20.0-F-1/4W
R7056	ERG2SJ820H	RES,M 82-J-2W
R7057	ER0S2CKF20R0	RES,M 20.0-F-1/4W
R7058	ER0S2CKF20R0	RES,M 20.0-F-1/4W
R7059	ER0S2CKF20R0	RES,M 20.0-F-1/4W
R7060	ER0S2CKF10R0	RES,M 10K-F-1/4
R7061	ER0S2CKF10R0	RES,M 10K-F-1/4
R7062	ER0S2CKF10R0	RES,M 10K-F-1/4
R7063	ER0S2CKF10R0	RES,M 10K-F-1/4
R7064	ER0S2CKF20R0	RES,M 20.0-F-1/4W
R7071	ERG2SJ121H	RES,M 120-J-2W
R7072	ERG2SJ820H	RES,M 82-J-2W
R7073	ER0S2CKF20R0	RES,M 20.0-F-1/4W
R7074	ER0S2CKF20R0	RES,M 20.0-F-1/4W
R7075	ER0S2CKF20R0	RES,M 20.0-F-1/4W
R7076	ER0S2CKF20R0	RES,M 20.0-F-1/4W
R7077	ER0S2CKF20R0	RES,M 20.0-F-1/4W
R7078	ER0S2CKF20R0	RES,M 20.0-F-1/4W
R7079	ER0S2CKF20R0	RES,M 20.0-F-1/4W
R7080	ER0S2CKF20R0	RES,M 20.0-F-1/4W
R7081	ER0S2CKF10R0	RES,M 10K-F-1/4
R7082	ER0S2CKF10R0	RES,M 10K-F-1/4
R7083	ER0S2CKF10R0	RES,M 10K-F-1/4
R7084	ER0S2CKF10R0	RES,M 10K-F-1/4
R7089	ER0S2CKF20R0	RES,M 20.0-F-1/4W
R7090	ER0S2CKF20R0	RES,M 20.0-F-1/4W
R7091	ER0S2CKF20R0	RES,M 20.0-F-1/4W
R7092	ER0S2CKF20R0	RES,M 20.0-F-1/4W
R7093	ER0S2CKF20R0	RES,M 20.0-F-1/4W
R7094	ER0S2CKF20R0	RES,M 20.0-F-1/4W
R7095	ER0S2CKF20R0	RES,M 20.0-F-1/4W
R7096	ER0S2CKF20R0	RES,M 20.0-F-1/4W
R7107	ERJ6GEYJ331	RES,M 330-J-1/10
R7108	ERJ6GEYJ331	RES,M 330-J-1/10
R7109	ERJ6GEYJ331	RES,M 330-J-1/10
R7112	ERJ6GEYJ331	RES,M 330-J-1/10
R7113	ERJ6GEYJ331	RES,M 330-J-1/10
R7121	ERJ6GEYJ103	RES,M 10K-J-1/10
R7122	ERJ6GEYJ103	RES,M 10K-J-1/10
R7127	ERJ6GEYJ103	RES,M 10K-J-1/10
R7130	ERJ6GEYJ103	RES,M 10K-J-1/10
R7131	ERJ6GEYJ103	RES,M 10K-J-1/10
R7132	ERJ6GEYJ103	RES,M 10K-J-1/10
R7133	ERJ6GEYJ684	RES,M 680K-J-1/10
R7136	ERJ6GEYJ103	RES,M 10K-J-1/10
R7139	ERJ6GEYJ103	RES,M 10K-J-1/10
R7140	ERJ6GEYJ221	RES,M 220-J-1/10
R7142	ERJ6GEYJ103	RES,M 10K-J-1/10
R7143	ERJ6GEYJ392	RES,M 3.9K-J-1/10
R7148	ERJ6GEYJ103	RES,M 10K-J-1/10
R7149	ERJ6GEYJ103	RES,M 10K-J-1/10
R7150	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R7151	ERJ6GEYJ682	RES,M 6.8K-J-1/10
R7152	ERJ6GEYJ103	RES,M 10K-J-1/10
R7153	ERJ6GEYJ103	RES,M 10K-J-1/10
R7154	ERJ6GEYJ103	RES,M 10K-J-1/10
R7155	ERJ6GEYJ103	RES,M 10K-J-1/10
R7156	ERJ6GEYJ103	RES,M 10K-J-1/10
R7157	ERJ6GEYJ103	RES,M 10K-J-1/10
R7158	ERJ6GEYJ103	RES,M 10K-J-1/10
R7159	ERJ6GEYJ103	RES,M 10K-J-1/10
R7160	ERJ6GEYJ103	RES,M 10K-J-1/10
R7161	ERJ6GEYJ103	RES,M 10K-J-1/10
R7162	ERJ6GEYJ103	RES,M 10K-J-1/10
R7163	ERJ6GEYJ103	RES,M 10K-J-1/10
R7164	ERJ6GEYJ103	RES,M 10K-J-1/10

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
R7165	ERJ6GEYJ103	RES,M 10K-J-1/10
R7166	ERJ6GEYJ103	RES,M 10K-J-1/10
R7172	ERJ6GEYJ103	RES,M 10K-J-1/10
R7173	ERJ6GEYJ103	RES,M 10K-J-1/10
R7175	ERJ6GEYJ103	RES,M 10K-J-1/10
R7177	ERJ6GEYJ103	RES,M 10K-J-1/10
R7178	ERJ6GEYJ103	RES,M 10K-J-1/10
R7179	ERJ6GEYJ103	RES,M 10K-J-1/10
R7182	ERJ6GEYJ562	RES,M 5.6K-J-1/10
R7183	ERJ6GEYJ562	RES,M 5.6K-J-1/10
R7184	ERJ6GEYJ103	RES,M 10K-J-1/10
R7186	ERJ6GEYJ103	RES,M 10K-J-1/10
R7188	ERJ6GEYJ103	RES,M 10K-J-1/10
R7189	ERJ6GEYJ103	RES,M 10K-J-1/10
R7190	ERJ6GEYJ103	RES,M 10K-J-1/10
R7191	ERJ6GEYJ103	RES,M 10K-J-1/10
R7192	ERJ6GEYJ103	RES,M 10K-J-1/10
R7193	ERJ6GEYJ103	RES,M 10K-J-1/10
R7194	ERJ6GEYJ123	RES,M 12K-J-1/10
R7195	ERJ6GEYJ103	RES,M 10K-J-1/10
R7196	ERJ6GEYJ103	RES,M 10K-J-1/10
R7197	ERJ6GEYJ103	RES,M 10K-J-1/10
R7198	ERJ6GEYJ103	RES,M 10K-J-1/10
R7201	ERJ6GEYJ103	RES,M 10K-J-1/10
R7202	ERJ6GEYJ103	RES,M 10K-J-1/10
R7204	ERJ6GEYJ103	RES,M 10K-J-1/10
R7207	ERJ6GEYJ103	RES,M 10K-J-1/10
R7208	ERJ6GEYJ103	RES,M 10K-J-1/10
R7209	ERJ6GEYJ103	RES,M 10K-J-1/10
R7211	ERJ6GEYJ103	RES,M 10K-J-1/10
R7212	ERJ6GEYJ103	RES,M 10K-J-1/10
R7214	ERJ6GEY0R00V	CHIP JUMPER
R7215	ERJ6GEYJ103	RES,M 10K-J-1/10
R7216	ERJ6GEYJ103	RES,M 10K-J-1/10
R7217	ERJ6GEYJ103	RES,M 10K-J-1/10
R7218	ERJ6GEYJ103	RES,M 10K-J-1/10
R7219	ERJ6GEYJ103	RES,M 10K-J-1/10
R7220	ERJ6GEYJ103	RES,M 10K-J-1/10
R7221	ERJ6GEYJ103	RES,M 10K-J-1/10
R7222	ERJ6GEYJ332	RES,M 3.3K-J-1/10
R7223	ERJ6GEYJ103	RES,M 10K-J-1/10
R7224	ERJ6GEYJ103	RES,M 10K-J-1/10
R7225	ERJ6GEYJ103	RES,M 10K-J-1/10
R7226	ERJ6GEYJ331	RES,M 330-J-1/10
R7227	ERJ6GEYJ332	RES,M 3.3K-J-1/10
R7228	ERJ6GEYJ103	RES,M 10K-J-1/10
R7229	ERJ6GEYJ103	RES,M 10K-J-1/10
R7230	ERJ6GEYJ103	RES,M 10K-J-1/10
R7231	ERJ6GEYJ331	RES,M 330-J-1/10
R7232	ERJ6GEYJ103	RES,M 10K-J-1/10
R7233	ERJ6GEYJ332	RES,M 3.3K-J-1/10

REF NO.	PART NO.	DESCRIPTION
R7234	ERJ6GEYJ103	RES,M 10K-J-1/10
R7235	ERJ6GEYJ103	RES,M 10K-J-1/10
R7236	ERJ6GEYJ331	RES,M 330-J-1/10
R7237	ERJ6GEYJ103	RES,M 10K-J-1/10
R7238	ERJ6GEYJ103	RES,M 10K-J-1/10
R7239	ERJ6GEYJ103	RES,M 10K-J-1/10
R7240	ERJ6GEYJ272	RES,M 2.7K-J-1/10
R7241	ERJ6GEYJ102	RES,M 1K-J-1/10
R7242	ERJ6GEYJ103	RES,M 10K-J-1/10
R7243	ERJ6GEYJ103	RES,M 10K-J-1/10
R7244	ERJ6GEYJ103	RES,M 10K-J-1/10
R7247	ERJ6GEYJ221	RES,M 220-J-1/10
R7248	ERJ6GEYJ221	RES,M 220-J-1/10
R7249	ERJ6GEYJ221	RES,M 220-J-1/10
R7250	ERJ6GEYJ221	RES,M 220-J-1/10
R7251	ERJ6GEYJ121	RES,M 120-J-1/10
R7253	ERJ6GEYJ223	RES,M 22K-J-1/10
R7254	ERJ6GEYJ223	RES,M 22K-J-1/10
R7255	ERJ6ENF2001	RES,M 2K-F-1/10
R7256	ERJ6GEYJ223	RES,M 22K-J-1/10
R7257	ERJ6GEYJ223	RES,M 22K-J-1/10
R7259	ERJ6ENF2001	RES,M 2K-F-1/10
R7261	ERJ6ENF2001	RES,M 2K-F-1/10
R7262	ERJ6GEYJ223	RES,M 22K-J-1/10
R7263	ERJ6GEYJ223	RES,M 22K-J-1/10
R7264	ERJ6ENF2202	RES,M 22K-F-1/10W
R7265	ERJ6ENF2202	RES,M 22K-F-1/10W
R7266	ERJ6ENF2202	RES,M 22K-F-1/10W
R7267	ERJ6ENF2202	RES,M 22K-F-1/10W
R7268	ERJ6ENF2202	RES,M 22K-F-1/10W
R7269	ERJ6ENF2202	RES,M 22K-F-1/10W
R7276	ERJ6ENF3902	RES,M 39K-F-1/10
R7277	ERJ6ENF3902	RES,M 39K-F-1/10
R7278	ERJ6ENF3902	RES,M 39K-F-1/10
R7280	ERJ6GEYJ102	RES,M 1K-J-1/10
R7281	ERJ6GEYJ102	RES,M 1K-J-1/10
R7282	ERJ6GEYJ102	RES,M 1K-J-1/10
R7283	ERJ6ENF1003	RES,M 100K-F-1/10
R7284	ERJ6ENF1003	RES,M 100K-F-1/10
R7285	ERJ6ENF1003	RES,M 100K-F-1/10
R7286	ERJ6ENF8202	RES,M 82K-F-1/10W
R7287	ERJ6ENF8202	RES,M 82K-F-1/10W
R7288	ERJ6ENF8202	RES,M 82K-F-1/10W
R7289	ERJ6ENF8202	RES,M 82K-F-1/10W
R7290	ERJ6ENF1003	RES,M 100K-F-1/10
R7291	ERJ6ENF8202	RES,M 82K-F-1/10W
R7292	ERJ6ENF1003	RES,M 100K-F-1/10
R7293	ERJ6ENF8202	RES,M 82K-F-1/10W
R7294	ERJ6ENF1003	RES,M 100K-F-1/10
R7295	ERJ6GEYJ102	RES,M 1K-J-1/10
R7296	ERJ6GEYJ102	RES,M 1K-J-1/10

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
R7297	ERJ6GEYJ102	RES,M 1K-J-1/10
R7298	ERJ6GEYJ561	RES,M 560-J-1/10
R7299	ERJ6ENF3902	RES,M 39K-F-1/10
R7300	ERJ6ENF3902	RES,M 39K-F-1/10
R7301	ERJ6ENF3902	RES,M 39K-F-1/10
R7308	ERJ6GEYJ561	RES,M 560-J-1/10
R7309	ERJ6GEYJ561	RES,M 560-J-1/10
R7310	ERJ6GEYJ561	RES,M 560-J-1/10
R7311	ERJ6GEYJ561	RES,M 560-J-1/10
R7312	ERJ6GEYJ561	RES,M 560-J-1/10
R7319	ERJ6GEYJ151	RES,M 150-J-1/10
R7320	ERJ6GEYJ151	RES,M 150-J-1/10
R7321	ERJ6GEYJ151	RES,M 150-J-1/10
R7322	ERJ6GEYJ680	RES,M 68-J-1/10
R7326	ERJ6GEYJ103	RES,M 10K-J-1/10
R7340	ERJ6GEYJ105	RES,M 1.0MEG-J-1/10
R7341	ERJ6GEYJ102	RES,M 1K-J-1/10
R7347	ERJ6GEYJ471	RES,M 470-J-1/10
R7348	ERJ6GEYJ102	RES,M 1K-J-1/10
R7402	ERJ6ENF2001	RES,M 2K-F-1/10
R7403	ERJ6GEYJ223	RES,M 22K-J-1/10
R7404	ERJ6GEYJ223	RES,M 22K-J-1/10
R7406	ERJ6ENF2001	RES,M 2K-F-1/10
R7407	ERJ6GEYJ223	RES,M 22K-J-1/10
R7408	ERJ6GEYJ223	RES,M 22K-J-1/10
R7410	ERJ6ENF2001	RES,M 2K-F-1/10
R7411	ERJ6GEYJ223	RES,M 22K-J-1/10
R7412	ERJ6GEYJ223	RES,M 22K-J-1/10
R7416	ERJ6GEYJ563	RES,M 56K-J-1/10
R7417	ERJ6GEYJ562	RES,M 5.6K-J-1/10
R7419	ERJ6GEYJ391	RES,M 390-J-1/10
R7420	ERJ6GEYJ391	RES,M 390-J-1/10
R7421	ERJ6GEYJ391	RES,M 390-J-1/10
R7430	ERJ6ENF1001	RES,M 1K-F-1/10
R7432	ERJ6ENF1001	RES,M 1K-F-1/10
R7434	ERJ6ENF1001	RES,M 1K-F-1/10
R7435	ERJ6GEYJ561	RES,M 560-J-1/10
R7436	ERJ6GEYJ561	RES,M 560-J-1/10
R7437	ERJ6ENF7321	RES,M 7.32K-F-1/10
R7455	ERJ6ENF6801	RES,M 6.8K-F-1/10
R7456	ERJ6ENF3301	RES,M 3.3K-F-1/10
R7457	ERJ6ENF6801	RES,M 6.8K-F-1/10
R7458	ERJ6ENF3301	RES,M 3.3K-F-1/10
R7460	ERJ6ENF6801	RES,M 6.8K-F-1/10
R7461	ERJ6ENF3301	RES,M 3.3K-F-1/10
R7462	ERJ6ENF6801	RES,M 6.8K-F-1/10
R7463	ERJ6ENF3301	RES,M 3.3K-F-1/10
R7465	ERJ6ENF6801	RES,M 6.8K-F-1/10
R7466	ERJ6ENF3301	RES,M 3.3K-F-1/10
R7467	ERJ6GEYJ682	RES,M 6.8K-J-1/10
R7468	ERJ6GEYJ332	RES,M 3.3K-J-1/10

REF NO.	PART NO.	DESCRIPTION
R7469	ERJ6GEYJ103	RES,M 10K-J-1/10
R7470	ERJ6GEYJ103	RES,M 10K-J-1/10
R7471	ERJ6GEYJ102	RES,M 1K-J-1/10
R7472	ERJ6GEYJ122	RES,M 1.2K-J-1/10
R7811	ERJ6ENF2701	RES,M 2.7K-F-1/10
R7812	ERJ6ENF1000	RES,M 100-F-1/10
R7813	ERJ6ENF1332	RES,M 13.3K-F-1/10W
R7815	ERJ6GEYJ221	RES,M 220-J-1/10
R7816	ERJ6GEYJ122	RES,M 1.2K-J-1/10
R7817	ERJ6GEYJ472	RES,M 4.7K-J-1/10
R7869	ERJ6ENF1002	RES,M 10K-F-1/10
R7910	ERJ6ENF5100	RES,M 510-F-1/10W
R7911	ERJ6ENF5100	RES,M 510-F-1/10W
R7912	ERJ6ENF5100	RES,M 510-F-1/10W
R7913	ERJ6ENF5100	RES,M 510-F-1/10W
R7914	ERJ6ENF5100	RES,M 510-F-1/10W
R7918	ERJ6ENF5601	RES,M 5.6K-F-1/10
R7927	ERJ6GEYJ221	RES,M 220-J-1/10
R7930	ERJ6ENF5100	RES,M 510-F-1/10W
R7931	ERJ6ENF5100	RES,M 510-F-1/10W
R7932	ERJ6ENF5100	RES,M 510-F-1/10W
R7933	ERJ6ENF5100	RES,M 510-F-1/10W
R7934	ERJ6ENF5100	RES,M 510-F-1/10W
R7938	ERJ6ENF5601	RES,M 5.6K-F-1/10
R7945	ERJ6ENF5100	RES,M 510-F-1/10W
R7946	ERJ6ENF5100	RES,M 510-F-1/10W
R7947	ERJ6ENF5100	RES,M 510-F-1/10W
R7948	ERJ6ENF5100	RES,M 510-F-1/10W
R7949	ERJ6ENF5100	RES,M 510-F-1/10W
R7958	ERJ6ENF5601	RES,M 5.6K-F-1/10
R7968	ERJ6ENF1302	RES,M 13K-F-1/10W
R7970	ERJ6GEYJ102	RES,M 1K-J-1/10
R8664	ERJ6ENF6801V	RES,M 6.8K-F-1/10
R8665	ERJ6GEYJ102	RES,M 1K-J-1/10
R8678	ERJ6GEYJ560	RES,M 56-J-1/10
R8679	ERJ6GEYJ560	RES,M 56-J-1/10
R8687	ERJ6GEYJ560	RES,M 56-J-1/10
R8691	ERJ6GEYJ560	RES,M 56-J-1/10
R8721	ERJ6GEYJ105	RES,M 1.0MEG-J-1/10
R8723	ERJ6GEYJ560	RES,M 56-J-1/10
R8728	ERJ6GEYJ560	RES,M 56-J-1/10
R8765	ERJ6GEYJ560	RES,M 56-J-1/10
R8771	ERJ6GEYJ560	RES,M 56-J-1/10
R8795	ERJ6GEYJ822	RES,M 8.2K-J-1/10
R8813	ERJ6GEYJ102	RES,M 1K-J-1/10
R8826	ERJ6GEYJ101	RES,M 100-J-1/10
R8827	ERJ6GEYJ101	RES,M 100-J-1/10
R8828	ERJ6GEYJ101	RES,M 100-J-1/10
R8829	ERJ6GEYJ101	RES,M 100-J-1/10
R8832	ERJ6GEYJ101	RES,M 100-J-1/10
R8833	ERJ6GEYJ101	RES,M 100-J-1/10

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
R8834	ERJ6GEYJ101	RES,M 100-J-1/10
R8835	ERJ6GEYJ101	RES,M 100-J-1/10
R8852	ERJ6GEYJ561	RES,M 560-J-1/10
R8853	ERJ6GEYJ561	RES,M 560-J-1/10
R8854	ERJ6GEYJ561	RES,M 560-J-1/10
R8860	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R8861	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R8862	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R8864	ERJ6GEYJ561	RES,M 560-J-1/10
R8865	ERJ6GEYJ101	RES,M 100-J-1/10
R8866	ERJ6GEYJ101	RES,M 100-J-1/10
R8868	ERJ6GEYJ101	RES,M 100-J-1/10
R8869	ERJ6GEYJ101	RES,M 100-J-1/10
R8870	ERJ6GEYJ101	RES,M 100-J-1/10
R8872	ERJ6GEYJ101	RES,M 100-J-1/10
R8873	ERJ6GEYJ101	RES,M 100-J-1/10
R8874	ERJ6GEYJ331	RES,M 330-J-1/10
R8875	ERJ6GEYJ101	RES,M 100-J-1/10
R8878	ERJ6GEYJ472	RES,M 4.7K-J-1/10
R8879	ERJ6GEYJ472	RES,M 4.7K-J-1/10
R8880	ERJ6GEYJ472	RES,M 4.7K-J-1/10
R8881	ERJ6GEYJ152	RES,M 1.5K-J-1/10
R8882	ERJENF3302V	RES,M 3K-J-1/10
R8883	ERJ6ENF6800	RES,M 680-F-1/10
R8884	ERJ6GEYJ122	RES,M 1.2K-J-1/10
R8889	ERJ6GEYJ560	RES,M 56-J-1/10
R8893	ERJ6GEYJ822	RES,M 8.2K-J-1/10
R8894	ERJ6GEYJ822	RES,M 8.2K-J-1/10
R8895	ERJ6GEYJ822	RES,M 8.2K-J-1/10
R8896	ERJ6GEYJ822	RES,M 8.2K-J-1/10
R8920	ERJ6GEYJ822	RES,M 8.2K-J-1/10
R8921	ERJ6GEYJ822	RES,M 8.2K-J-1/10
R8924	ERJ6ENF1503	RES,M 150K-F-1/10W
R8925	ERJ6ENF1203	RES,M 120K-F-1/10
R8944	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R8945	ERJ6GEYJ222	RES,M 2.2K-J-1/10
R8946	ERJ6GEYJ561	RES,M 560-J-1/10
	SWITCHES	
S010	EVQQVC13T	SWITCH
S011	EVQQVC13T	SWITCH
S012	EVQQVC13T	SWITCH
S013	EVQQVC13T	SWITCH
S014	EVQQVC13T	SWITCH
S015	EVQQVC13T	SWITCH
S016	EVQQVC13T	SWITCH
	TRANSFORMERS	
T501	ETH19Y187AY	TRANSFORMER
T551	**KFT7AQ228F**	**TRANSFORMER (FBT)**
T802	**ETS49AH275AC**	**TRANSFORMER**
T2801	**ETP28Z439AF**	**TRANSFORMER, POWER**
	CRYSTALS/FILTERS	

REF NO.	PART NO.	DESCRIPTION
X001	TSSA096	CRYSTAL
X101	M1972M	FILTER
X102	EFCS4R5MW5BA	FILTER 4.5MHZ
X201	SFSH4R5MDB	CRYSTAL
X501	TAFCSB503F38	CRYSTAL, CLOCK
X2102	EFCS4R5MW5BA	FILTER 4.5MHZ
X2103	M1972M	SAW
X3151	TSS9035-B	CRYSTAL
X5201	TSSJ024	CRYSTAL
X5202	TSSA114	CRYSTAL
X5203	TSSA115	CRYSTAL
X5602	TSSA047	CRYSTAL
X5701	TSSA115	20MHZ X'TAL
X5702	TSSA067	14.318MHZ X'TAL
X7101	EF0EC4004T4	CRYSTAL
X8701	EF0EC1205V4	CRYSTAL OSCILLATOR
	OTHERS	
M001	EASJ14PL10A3	SPEAKER (WOOFER)
M002	EASJ6PH05A3	SPEAKER (TWEETER)
M003	ENPE627	SPLITTER
TNR001	**ENV56D36G3**	**TUNER**
TNR2101	**ENV56D36G3**	**TUNER**
RM002	RPM-637CBRL	IR RECEIVER, REMOTE CONTROL
M004	EUR511155	XMTR, REMOTE CONTROL
M005	UR51EC892A	BATTERY COVER, REMOTE CONTROL
DY	**KDY2AS631F**	**YOKE, DEFLECTION** ***PT-61DX80A/CA***
DY	**KDY2AS976F**	**YOKE, DEFLECTION** ***PT-51DX80A/CA***
M006	P050010	PHONO PIN
M007	TBL2AH30031	CASTER
M008	TBL2A3106	CASTER (HRB0C2000ZTPC-HT)
M009	TBM2AA0011	BADGE, PANASONIC
M010	TBM2AC0191	OVERLAY
M011	TBM2AC0221	OVERLAY
M012	TBX2AA1801GM	BUTTON
M013	TEK6935	DOOR, CATCH
M014	TJSC00700	CRT SOCKET
M015	TKB2AA0104M	CABINET, WOOD PTV *PT-51DX80A/CA*
M016	TKB2AA0114M	CABINET, WOOD PTV *PT-61DX80A/CA*
M017	TKGF5005	LENS, PTV
M018	TKG2AA50051	MIRROR, GLASS *PT-51DX80A/CA*
M019	TKG2AA50061	MIRROR, GLASS *PT-61DX80A/CA*
M020	TKG2AD00011	PANEL *PT-51DX80A/CA*
M021	TKG2AD00012	PANEL, PLASTIC *PT-61DX80A/CA*
M022	TKG2AF5002	DELTA 77 C LENS
M023	TKG2AH50181	SCREEN, FRESNEL *PT-61DX80A/CA*
M024	TKG2AH50191	SCREEN, LENTICULAR *PT-61DX80A/CA*
M025	TKG2AH50201	SCREEN, LENTICULAR *PT-51DX80A/CA*
M026	TKG2AH50261	SCREEN, FRESNEL *PT-51DX80A/CA*
M027	TKP2AA02102M	CONTROL PANEL (STONE)

REPLACEMENT PARTS LIST

Models: PT-51DX80A, PT-51DX80CA, PT-61DX80A & PT-61DX80CA

Important Safety Notice: Components printed in **BOLD TYPE** have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

REF NO.	PART NO.	DESCRIPTION
M028	TKP2AA02313M	SIDE GRILLE L(W/NET) *PT-61DX80A/CA*
M029	TKP2AA02314M	SIDE GRILLE L(W/NET) *PT-51DX80A/CA*
M030	TKP2AA02315M	SIDE GRILLE R(W/NET) *PT-51DX80A/CA*
M031	TKP2AA02316M	SIDE GRILLE R(W/NET) *PT-61DX80A/CA*
M032	TKP2AA02502M	CENTER GRILL *PT-51DX80A/CA*
M033	TKP2AA02505M	CENTER GRILLE *PT-61DX80A/CA*
M034	TKU2AA00901B	BAKC COVER (LOWER) *PT-51DX80A/CA*
M035	TKU2AA01101B	BACK COVER (LOWER) *PT-61DX80A/CA*
M036	TLHX014	MAGNET, STATIC CONVERGENCE
M037	TMK15943	MICA SHEET
M038	TMK2AA00301	FELT, RL 3.2X19.1MM
M039	TMK2AK00203	MIRROR SPACER
M040	TMK2AX00202	VELCRO, DUAL LOCK TAPE
M041	TMK2AX00204	TAPE
M042	TMK2AX00301	SHEET, LIGHT COVER
M043	TMK2A70123	PAD, FOAM
M044	TMK2A70124	PAD, FOAM
M045	TMK2A70902	FELT, RL 8MM X 46M
M046	TNX2A1001	FOCUS PACK
M047	TQB2AA0298	MANUAL, OWNERS *PT-51DX80A* *PT-61DX80A*
M048	TQB2AA0299	MANUAL, OWNERS *PT-51DX80CA* *PT-61DX80CA*
M049	TQB2AA7047	REMOTE GUIDE
M050	TQB2AA7049	V-CHIP ROLLER GUIDE
M051	**TSX2AA0221**	**LINE CORD**
M052	TXFKG05ASER	ASSY, SCREEN FRAME *PT-51DX80A/CA*
M053	TXFKG07ASER	ASSY, SCREEN FRAME *PT-61DX80S/CA*
M054	**TXFCRT01ASER**	**ASSY, BLUE CRT**
M055	**TXFCRT02ASER**	**ASSY, GREEN CRT**
M056	**TXFCRT03ASER**	**ASSY, RED CRT**
M057	TXF3A01ECV	ASSY, DAG GND
JK1001	TJB2AA00102	TERMINAL, A/V
JK3001	TJB2AA0121	AV TERMINAL
JK3002	TJB2AA0201	TERMINAL, A/V 10P

Serviceman Mode (Electronic Controls)
Service Adjustment Values

Model _____ Ser #_____ Date_____

Note: Record the original settings PRIOR to modifying the registers.

ITEM	SERVICE ADJUSTMENT	Default Level	Original Value	New Value
VCJ SUB-DATA Adjustments				
B00	Sub-Contrast(Default)	41		
B01	Sub-Brightness(Default)	78		
B02	Sub-Color(Default)	32		
B03	Sub-Tint(Default)	45		
B04	RYaxisAngle(Default)	4		
B05	BYaxisGain(Default)	6		
B06	Sub-Contrast(YUV&&Not 525p)	35		
B07	Sub-Brightness(YUV&&Not 525p)	65		
B08	Sub-Color(YUV&&Not 525p)	49		
B09	Sub-Tint(YUV&&Not 525p)	30		
B0a	RYaxisAngle(YUV&&Not 525p)	5		
B0b	BYaxisGain(YUV&&Not 525p)	0		
B0c	Sub-Contrast(525p&&Not 274M)	35		
B0d	Sub-Brightness(525p&Not 274M)	88		
B0e	Sub-Color(525p&&Not 274M)	49		
B0f	Sub-Tint(525p&&Not 274M)	27		
B10	RYaxisAngle(525p&&Not 274M)	4		
B11	BYaxisGain(525p&&Not 274M)	7		
B12	Sub-Contrast(525p&&274M)	54		
B13	Sub-Brightness(525p&&274M)	88		
B14	Sub-Color(525p&&274M)	49		
B15	Sub-Tint(525p&&274M)	22		
B16	RYaxisAngle(525p&&274M)	2		
B17	BYaxisGain(525p&&274M)	20		
B18	YuvYlevel	24		
B19	YuvTint	26		
B1a	YuvColor	32		
B1b	Rfagc	127		
B1c	Sub-Sharpness1(Default)	10		
B1d	Sub-Sharpness2(Default)	101		
B1e	Sub-Sharpness1(YUV)	10		
B1f	Sub-Sharpness2(YUV)	101		
B20	Pip Tint	250		
B21	Pip Contrast	37		
B22	Pip Bright	78		
VCJ CUT-OFF Adjustments				
C00	Rcutoff(Default)	1-169		
C01	G cutoff	128		
C02	B cutoff (Default)	1-145		
C03	Brightness	3		
C04	R drive (Default)	123		

ITEM	SERVICE ADJUSTMENT	Default Level	Original Value	New Value
C05	B drive(Default)	117		
C06	R cutoff(YUV)	1-138		
C07	B cutoff(YUV)	1-151		
C08	R drive(YUV)	128		
C09	B drive(YUV)	113		
C0a	Black G Cor Gain (Default)	10		
C0b	WhiteG Cor Levl (Default)	15		
C0c	White G Cor Gain (Default)	15		
C0d	Blooming Dc (Default)	100		
C0e	UNDEFINED	--		
C0f	Black G Cor Gain (525p)	10		
C10	White G Cor Levl (525p)	15		
C11	WhiteG Cor Gain (525p)	15		
C12	Blooming Dc (525p)	98		
C13	UNDEFINED	--		
PINCUSHION Adjustments				
D00	Picture Height	29		
D01	V liniality	15		
D02	V S correction	1		
D03	Trapezoid Base	26		
D04	Trapezoid Offset	0		
D05	Ew dc Base	23		
D06	Ew dc Offset	1		
D07	Ew Amplitude Base	15		
D08	Ew Amplitude Offset	0		
D09	H position Base	13		
D0a	H position Offset	0		
D0b	Ew Corner Bottom	9		
D0c	Ew Corner Top	9		
D0d	Conver Mute	0		
D0e	Side pin	8		
D0f	Pararell	8		
D10	V compensation	15		
D11	HehtGain	1		
D12	EhtAcGain	7		
D13	Dac Mode	0		
D14	Afc1Gain	1		
D15	H osd Position (Default)	39		
D16	V osd Position (Default)	25		
D17	H osd Position(525p&&1picture)	25		
D18	VosdPosition(525p&&1picture)	21		
D19	HosdPosition(525p&&Pip On)	43		

Serviceman Mode (Electronic Controls)
Service Adjustment Values

Model _____ Ser #_____ Date_____

Note: Record the original settings PRIOR to modifying the registers.

ITEM	SERVICE ADJUSTMENT	Default Level	Original Value	New Value
D1a	V osd Position(525p&&Pip On)	17		
	PIP Adjustments			
P00	H Pip Position(525i || NoSignal)	3		
P01	V Pip Position	16		
P02	Main H Phase(525i || NoSignal)	238		
P03	Main H Phase(Default)	106		
P04	Main V Phase(525i || NoSignal)	16		
P05	Main V Phase(Default)	27		
P06	Pip Picture Position(H)	20		
P07	Pip Picture Position(V)	13		
P08	H Pip Position(Default)	2		
	S OPTION Adjustments			
S00	Mts Input level	40		
S01	MtsPllvco	27		
S02	Mts Filter	27		
S03	Mts Low Sepa	36		
S04	Mts High Sepa	21		
S05	Loudness Comp	7		
S06	Clock Corr	115		
S07	Cap Digital filter	1		
S08	Cap Scrol	1		
S09	UNDEFINED	--		
S0a	UNDEFINED	--		
S0b	UNDEFINED	--		
S0c	UNDEFINED	--		
S0d	Fhl	6		
S0e	Fhh	30		
S0f	Upd64081_02_sw	1		
S10	Upd64081_11_sw	0		
S11	Tg2_11_sw	0		
S12	AmdpScramble_sw	0		
S13	Pip Bright Plus	9		
S14	Pip Bright Minus	9		
	Y OPTION Adjustments			
Y00	Yuv Delay Line2(Default)	0		
Y01	Yuv Delay Line1(Default)	0		
Y02	Y Delay Line2(Default)	0		
Y03	Y Delay Line1(Default)	0		
Y04	Vm Gain(Default)	62		
Y05	Sepa Core Level(Default)	72		
Y06	Detail Coring(Default)	154		
Y07	Detail Gain(Default)	128		

ITEM	SERVICE ADJUSTMENT	Default Level	Original Value	New Value
Y08	Sharpness(Default)	128		
Y09	Dsc Gain Small(Default)	58		
Y0a	Dsc Gain Big(Default)	78		
Y0b	Vm Limiter(Default)	152		
Y0c	YuvDelayLine2(525i&& (Pip||Search))	0		
Y0d	YuvDelayLine1(525i&& (Pip||Search))	0		
Y0e	YDelayLine2(525i&& (Pip||Search))	0		
Y0f	YDelayLine1(525i&& (Pip||Search))	0		
Y10	VmGain(525i&&(Pip||Search))	70		
Y11	SepaCoreLevel(525i&& (Pip||Search))	72		
Y12	DetailCoring(525i&& (Pip||Search))	154		
Y13	DetailGain(525i&&(Pip||Search))	112		
Y14	Sharpness(525i&&(Pip||Search))	112		
Y15	DscGainSmall(525i&& (Pip||Search))	69		
Y16	DscGainBig(525i&&(Pip||Search))	84		
Y17	VmLimiter(525i&&(Pip||Search))	152		
Y18	YuvDelayLine2(525p&&1picture)	0		
Y19	YuvDelayLine1(525p&&1picture)	0		
Y1a	YDelayLine2(525p&&1picture)	0		
Y1b	YDelayLine1(525p&&1picture)	0		
Y1c	Vm Gain(525p&&1picture)	70		
Y1d	SepaCoreLevel(525p&&1picture)	72		
Y1e	DetailCoring(525p&&1picture)	154		
Y1f	Detail Gain(525p&&1picture)	128		
Y20	Sharpness(525p&&1picture)	128		
Y21	Dsc Gain Small(525p&&1picture)	100		
Y22	Dsc Gain Big(525p&&1picture)	112		
Y23	Vm Limiter(525p&&1picture)	152		
Y24	OmuselHOffset	47		
Y25	OmuselVOffset	5		
Y26	Y peaking(Default)	3		
Y27	Yhcor(Default)	2		
Y28	Ypeaking(VIDEO)	3		
Y29	Yhcor(VIDEO)	3		
Y2a	Upd03(Default)	161		
Y2b	Upd03(C-VIDEO)	162		
Y2c	Upd03(S-VIDEO)	163		
Y2d	Ext44_00_bp74	0		

Serviceman Mode (Electronic Controls)
Service Adjustment Values

Model _____ Ser #_____ Date_____

Note: Record the original settings PRIOR to modifying the registers.

ITEM	SERVICE ADJUSTMENT	Default Level	Original Value	New Value
Y2e	Dsp2600	169		
Y2f	Dsp2700	128		
Y30	Dsp2800(Default)	98		
Y31	Dsp2800(RF)	209		
Y32	Dsp2900	42		
Y33	Dsp2a00 (Not (525i&&PIP))	188		
V OPTION Adjustments				
V00	CONVER MODE(STATIC)	0		
V01	CONVER MODE(POINT)	0		
V02	AblInput	--		
V03	UNDEFINED	--		
V04	VmOnoff	0		
V05	AblOnoff	0		
V06	UNDEFINED	--		

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V99082620CM1015

A-Board Schematic, Left Portion
Diagrama Eléctrico (A), Sección Izquierda

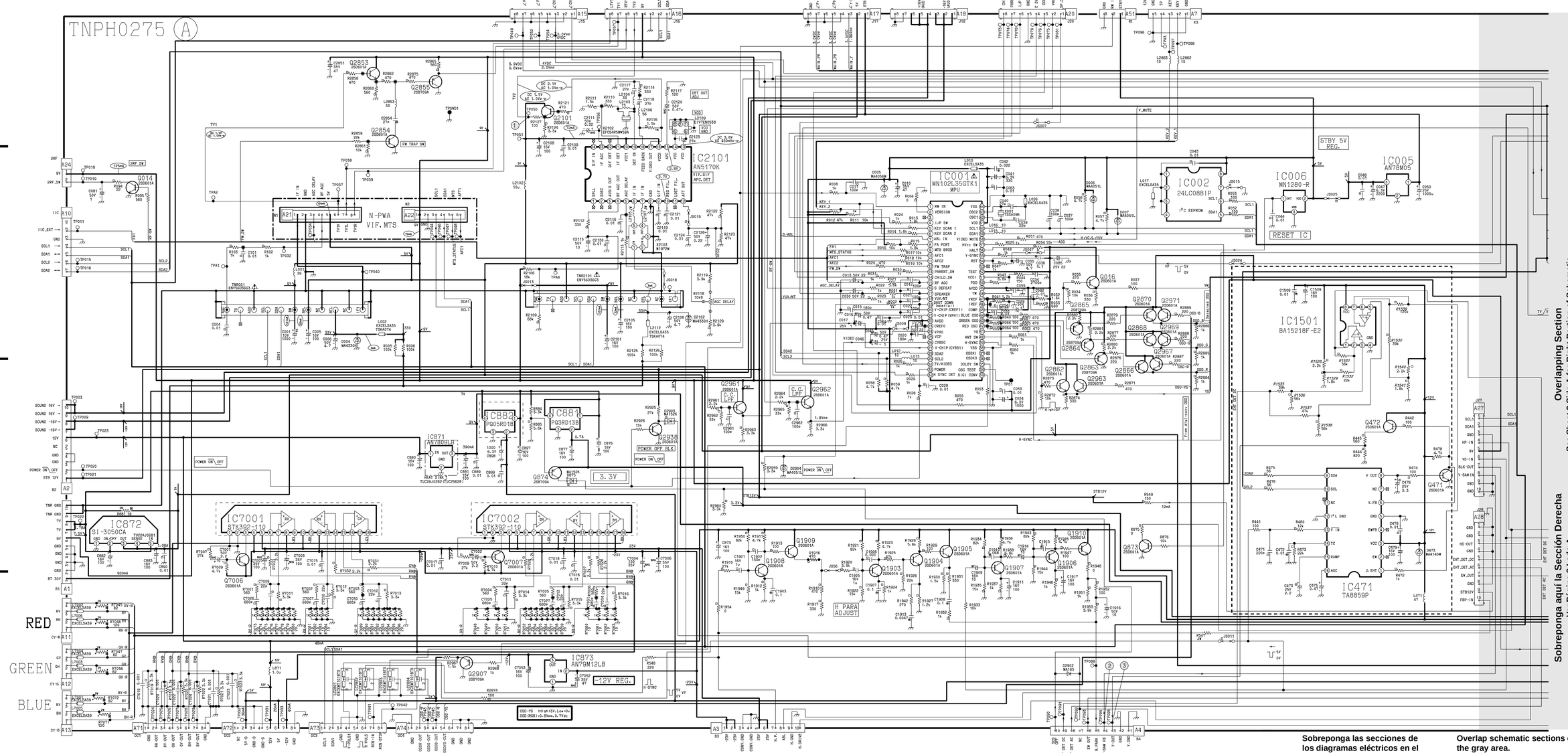


Diagrama Eléctrico
Tarjeta A
(Sección Izquierda)
MTC9908031C1 & MTC9908032C1

Página 1 de 10
Lado A

Sheet 1 of 10
Side A

A-Board Schematic
(Left Portion)
PT-51DX80A/CA & PT-61DX80A/CA/VA

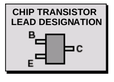
Overlapping Section
See Sheet 2 Side A for Right Portion of Schematic

Sobreponga aquí la Sección Derecha
Ver Página 2 Lado A

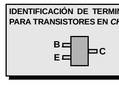
Sobreponga las secciones de los diagramas eléctricos en el área gris.

Overlap schematic sections on the gray area.

CHIP TRANSISTOR LEAD DESIGNATION



IDENTIFICACIÓN DE TERMINALES PARA TRANSISTORES EN *CHIP*



Schematic Notes

1. Resistors are carbon 1/4W unless noted otherwise.
2. Capacitors are ceramic 50V unless noted otherwise.
3. Coil value notes is inductance in µH.
4. Test point indicated by ▼, Test point but no pin ▽.
5. Components indicated with ⚠ are critical parts and replacement should be made with manufacture specified replacement parts only.
6. ▬▬ (**BOLD LINE**) indicates the route of B+ supply.
7. The schematic diagrams are current at the time of printing and are subject to change without notice.
8. Ground symbol ⏚ indicates **HOT GROUND CONNECTION**; ⏚ indicates COLD GROUND.

NOTE: All other component symbols are used for engineering design purposes.

Waveform Measurements

1. ① indicates waveform measurement. (Measurement can be taken at the best accessible location in common to the indicated point.)
2. Taken with an NTSC signal generator connected to the antenna terminal. (NTSC color bar pattern of 8 bars of EIA colors, 100 IRE white and 7.5 IRE black.)
3. Customer Controls (Picture/Audio Menu) are set to Normalize. Volume is set to "MIN".
4. All video and color waveforms are taken with a wideband scope and a probe with low capacitance (10 to 1). Shape and peak altitudes may vary depending on the type of Oscilloscope used and its settings.
5. Ground symbol ⏚ shown on waveform number indicates (Hot) ground lead connection of the Oscilloscope.

CAUTION: Incorrect ground connection of the test equipment will result in erroneous readings.

The waveforms are taken in the order of circuit flow through the various sections.

Voltage Measurements

1. Voltage measurement:
   - AC input to the PTV is 120V, NTSC or HD (1125i & 525P) signal generator is connected to the antenna of the PTV. (Color bar pattern of 100 IRE white and 7.5 IRE black.)
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     TV ANT/CABLE - (Set-Up Menu) in TV/ANT Mode
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   - Voltage readings are nominal and may vary ±10% on active devices. Some voltage reading will vary with signal strength and picture content.
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2. Ground symbol ⏚ indicates ground lead connection of meter. Incorrect ground connection will result in erroneous readings.

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NOTA DE SEGURIDAD

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- B-Board - Power Supply
- D-Board - Diode Mod. H. Drive
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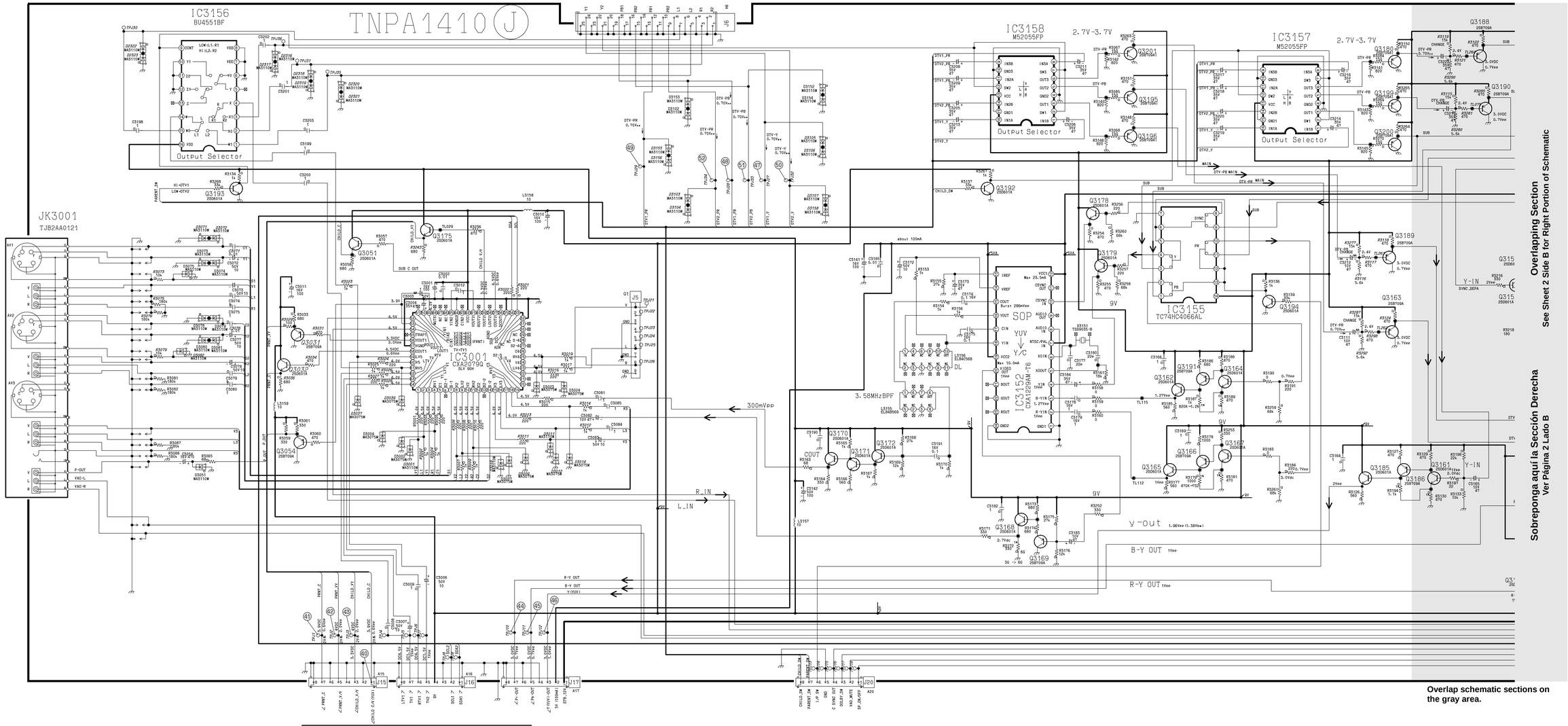
- Tarjeta N - VIF, MTS
- Tarjeta R - Sensor del Control Remoto
- Tarjetas SB/SG/SR - VM para el Rojo, Azul y Verde
- Tarjeta T - Poder Alterno
- Tarjeta X - Señal de Sync RGB
- Tarjeta YC - 3D Y/C

J-Board Schematic, Left Portion
Diagrama Eléctrico (J), Sección Izquierda



Schematic Notes

1. Resistors are carbon 1/4W unless noted otherwise.
2. Capacitors are ceramic 50V unless noted otherwise.
3. Coil value notes is inductance in µH.
4. Test point indicated by ⏚ : Test point but no pin ⨍.
5. Components indicated with ⚠ are critical parts and replacement should be made with manufacture specified replacement parts only.
6. ▬▬ (**BOLD LINE**) indicates the route of B+ supply.
7. The schematic diagrams are current at the time of printing and are subject to change without notice.
8. Ground symbol ⏚ indicates **HOT GROUND CONNECTION**; ⏦ indicates COLD GROUND.

NOTE: All other component symbols are used for engineering design purposes.

Notas de los Diagramas

1. Las Resistencias son de Carbón de 1/4W, a menos que se indique otra característica.
2. Los Capacitores son de Cerámica para 50V, a menos que se indique otra característica.
3. El valor indicado de las Bobinas es la inductancia expresada en µH.
4. Los puntos de prueba en la terminal de algún componente son indicados por ⏚. Los puntos de prueba fuera de los componentes se indican con ⨍.
5. Los componentes señalados con el símbolo ⚠ son considerados componentes críticos y deben ser reemplazados sólo con las partes especificadas por el fabricante.
6. ▬▬ (**LINEA GRUESA**) indica las líneas de alimentación de los Voltajes B+.
7. Los diagramas eléctricos están sujetos a cambio sin previo aviso.
8. El símbolo ⏚ indica que es una conexión a **Tierra Caliente** y el símbolo ⏦ indica conexión a **Tierra Fría**.

NOTA: Los demas símbolos de componentes incluidos son usados con fines de diseño.

Waveform Measurements

1. ② indicates waveform measurement. (Measurement can be taken at the best accessible location in common to the indicated point.)
2. Taken with an NTSC signal generator connected to the antenna terminal. (NTSC color bar pattern of 8 bars of EIA colors, 100 IRE white and 7.5 IRE black.)
3. Customer Controls (Picture/Audio Menu) are set to Normalize. Volume is set to "MIN".
4. All video and color waveforms are taken with a wideband scope and a probe with low capacitance (10 to 1). Shape and peak altitudes may vary depending on the type of Oscilloscope used and its settings.
5. Ground symbol ⏚ shown on waveform number indicates (Hot) ground lead connection of the Oscilloscope.

CAUTION: Incorrect ground connection of the test equipment will result in erroneous readings.

The waveforms are taken in the order of circuit flow through the various sections.

Medición de Formas de Onda

1. Un símbolo como ② indica el punto para medir una señal. (La medición puede hacerse en el punto con mayor accesibilidad, siempre que sea común al indicado.)
2. Se midieron utilizando un generador con formato NTSC conectado a la terminal de la antena. (Patrón de 8 Barras de Colores EAI, formato NTSC de 100 IREs para el Blanco y 7.5 IREs para el Negro.)
3. Los ajustes de usuario de los Menus PICTURE y AUDIO se normalizaron. Posteriormente el nivel de volumen se ajusta al mínimo.
4. Las formas de onda de Video y Color fueron tomadas con un osciloscopio de banda alta y con un punta de prueba de baja capacitancia (10 a 1). La forma y amplitud de las ondas puede variar según el tipo de osciloscopio que se utilice y sus características.
5. El símbolo de tierra ⏚ que aparece junto al número de la forma de onda, indica que se utiliza conexión a **Tierra Caliente** en el extremo negativo de la punta de prueba.

PRECAUCION: Si no se utiliza la conexión a la tierra adecuada, se obtendrán mediciones equivocadas y podría dañar el equipo de medición.

Voltage Measurements

1. Voltage measurement:
   - AC input to the PTV is 120V, NTSC or HD (1125i & 525P) signal generator is connected to the antenna of the PTV. (Color bar pattern of 100 IRE white and 7.5 IRE black.)
   - All Picture and Audio adjustments are set to Normalize.
     TV ANT/CABLE - (Set-Up Menu) in TV/ANT Mode
     Volume - Min.
     TV/Video SW - TV position
     Audio Mode - Stereo
   - Voltage readings are nominal and may vary ±10% on active devices. Some voltage reading will vary with signal strength and picture content.
   - Supply voltages are nominal.
2. Ground symbol ⏚ indicates ground lead connection of meter.
   Incorrect ground connection will result in erroneous readings.

*CAUTION: **Incorrect ground connection of the test equipment will result in erroneous readings.***

Medición de Voltajes

1. Medición de voltaje:
   - El voltaje de entrada al Receptor es de 120V de Corriente Alterna. Un generador de patrones con formato NTSC se conecta a la entrada de la antena. (Patrón de Barras de Colores con 100 IREs para el Blanco y 7.5 IREs para el Negro.)
   - Los ajustes de los Menus Picture y Audio se normalizan.
     En el Menú Set-Up, en la opción ANTENA, se selecciona el modo de CABLE.
     El nivel de Volumen se minimiza.
     De los modos TV y Video, seleccionar el modo TV.
     Seleccionar modo Estereo del Audio.
   - Las mediciones de los voltajes son nominales y pueden variar hasta 10% en componentes en funcionamiento. Las lecturas de los voltajes pueden variar por la potencia de la señal y el contenido de la imagen.
   - Las fuentes de voltajes son nominales.
2. El símbolo ⏚ indica el tipo de tierra que se utiliza en la conexión del medidor.

PRECAUCION: Si no se utiliza la conexión a la tierra adecuada, se obtendrán mediciones equivocadas y podría dañar el equipo de medición.

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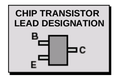
Note:

Voltages and waveforms are on Sheet 3 Side A and Sheet 5 Side B, respectively.

Nota:

Los voltajes y formas de onda se localizan en el lado A de la página 3 y en el lado B de la página 5 respectivamente.

CHIP TRANSISTOR LEAD DESIGNATION



IDENTIFICACIÓN DE TERMINALES PARA TRANSISTORES EN CHIP

Overlapping Section

See Sheet 2 Side B for Right Portion of Schematic

Sobreponga aquí la Sección Derecha

Ver Página 2 Lado B

Overlap schematic sections on the gray area.

Sobreponga las secciones de los diagramas eléctricos en el área gris.

MTC990803 1C1 & MTC990803 2C1

Diagrama Eléctrico Tarjeta J
(Sección Izquierda)

Sheet 1 of 10
Side B

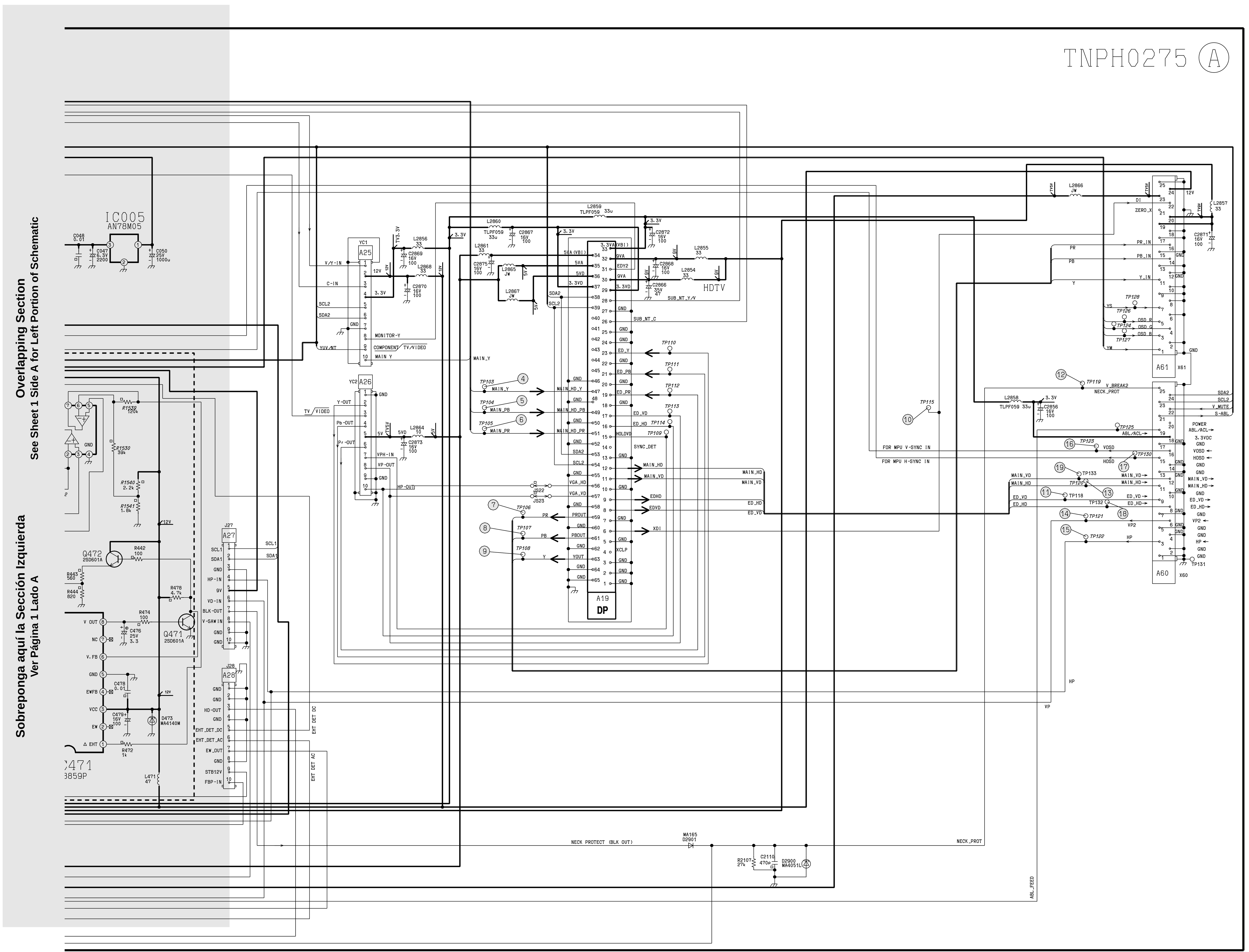
Página 1 de 10
Lado B

J-Board Schematic
(Left Portion)

PT-51DX80A/CA & PT-61DX80A/CA/NA

A B C D E F G H

A-Board Schematic, Right Portion
Diagrama Eléctrico (A), Sección Derecha



Overlap schematic sections on the gray area.

Sobreponga las secciones de los diagramas eléctricos en el área gris.

Diagrama Eléctrico Tarjeta A (Sección Derecha) **MTC9908031C1 & MTC9908032C1**

Sheet 2 of 10 Side A

Página 2 de 10 Lado A

A-Board Schematic (Right Portion) **PT-51DX80A/CA & PT-61DX80A/CA/VA**

Notas de los Diagramas

1. Las Resistencias son de Carbón de 1/4W, a menos que se indique otra característica.
2. Los Capacitores son de Cerámica para 50V, a menos que se indique otra característica.
3. El valor indicado de las Bobinas es la inductancia expresada en µH.
4. Los puntos de prueba en la terminal de algún componente son indicados por . Los puntos de prueba fuera de los componentes se indican con .
5. Los componentes señalados con el símbolo ⚠ son considerados componentes críticos y deben ser reemplazados sólo con las partes especificadas por el fabricante.
6. ▬ (**LINEA GRUESA**) indica las líneas de alimentación de los Voltajes B+.
7. Los diagramas eléctricos están sujetos a cambio sin previo aviso.
8. El símbolo indica que es una conexión a **Tierra Caliente** y el símbolo indica conexión a **Tierra Fría**.

NOTA: Los demas símbolos de componentes incluidos son usados con fines de diseño.

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1. Un símbolo como ③ indica el punto para medir una señal. (La medición puede hacerse en el punto con mayor accesibilidad, siempre que sea común al indicado.)
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5. El símbolo de tierra que aparece junto al número de la forma de onda, indica que se utiliza conexión a **Tierra Caliente** en el extremo negativo de la punta de prueba.

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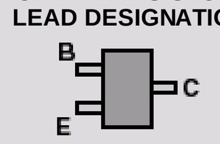
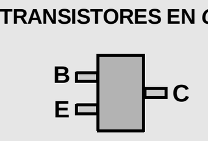


IDENTIFICACIÓN DE TERMINALES PARA TRANSISTORES EN CHIP



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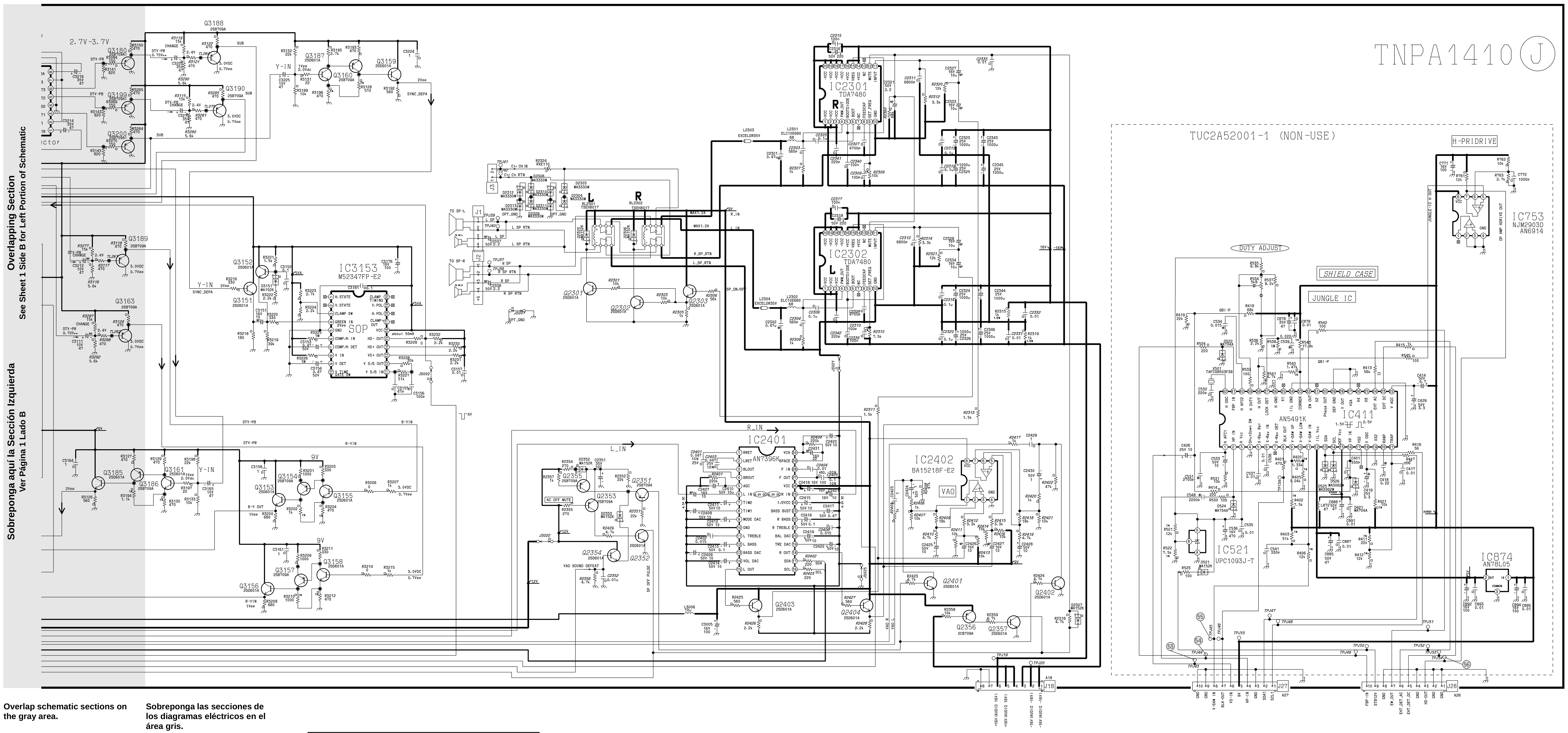
- Tarjetas SB/SG/SR - VM para el Rojo, Azul y Verde
- Tarjeta T - Poder Alterno
- Tarjeta X - Señal de Sync RGB
- Tarjeta YC - 3D Y/C

J-Board Schematic, Right Portion
Diagrama Eléctrico (J), Sección Derecha



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Sobreponga las secciones de los diagramas eléctricos en el área gris.

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8. Ground symbol ⏚ indicates **HOT GROUND CONNECTION**; ⏚ indicates COLD GROUND.

NOTE: All other component symbols are used for engineering design purposes.

Notas de los Diagramas

1. Las Resistencias son de Carbón de 1/4W, a menos que se indique otra característica.
2. Los Capacitores son de Cerámica para 50V, a menos que se indique otra característica.
3. El valor indicado de las Bobinas es la inductancia expresada en µH.
4. Los puntos de prueba en la terminal de algún componente son indicados por . Los puntos de prueba fuera de los componentes se indican con .
5. Los componentes señalados con el símbolo ⚠ son considerados componentes críticos y deben ser reemplazados sólo con las partes especificadas por el fabricante.
6. ▬ (**LINEA GRUESA**) indica las líneas de alimentación de los Voltajes B+.
7. Los diagramas eléctricos están sujetos a cambio sin previo aviso.
8. El símbolo ⏚ indica que es una conexión a **Tierra Caliente** y el símbolo ⏚ indica conexión a **Tierra Fría**.

***NOTA:** Los demas símbolos de componentes incluidos son usados con fines de diseño.*

Waveform Measurements

1. ③ indicates waveform measurement. (Measurement can be taken at the best accessible location in common to the indicated point.)
2. Taken with an NTSC signal generator connected to the antenna terminal. (NTSC color bar pattern of 8 bars of EIA colors, 100 IRE white and 7.5 IRE black.)
3. Customer Controls (Picture/Audio Menu) are set to Normalize. Volume is set to "MIN".
4. All video and color waveforms are taken with a wideband scope and a probe with low capacitance (10 to 1). Shape and peak altitudes may vary depending on the type of Oscilloscope used and its settings.
5. Ground symbol ⏚ shown on waveform number indicates (Hot) ground lead connection of the Oscilloscope.

CAUTION: Incorrect ground connection of the test equipment will result in erroneous readings.

The waveforms are taken in the order of circuit flow through the various sections.

Medición de Formas de Onda

1. Un símbolo como ③ indica el punto para medir una señal. (La medición puede hacerse en el punto con mayor accesibilidad, siempre que sea común al indicado.)
2. Se midieron utilizando un generador con formato NTSC conectado a la terminal de la antena. (Patrón de 8 Barras de Colores EAI, formato NTSC de 100 IREs para el Blanco y 7.5 IREs para el Negro.)
3. Los ajustes de usuario de los Menus PICTURE y AUDIO se normalizaron. Posteriormente el nivel de volumen se ajusta al mínimo.
4. Las formas de onda de Video y Color fueron tomadas con un osciloscopio de banda alta y con una punta de prueba de baja capacitancia (10 a 1). La forma y amplitud de las ondas puede variar según el tipo de osciloscopio que se utilice y sus características.
5. El símbolo de tierra ⏚ que aparece junto al número de la forma de onda, indica que se utiliza conexión a **Tierra Caliente** en el extremo negativo de la punta de prueba.

***PRECAUCION:** Si no se utiliza la conexión a la tierra adecuada, se obtendrán mediciones equivocadas y podría dañar el equipo de medición.*

Voltage Measurements

1. Voltage measurement:
   - AC input to the PTV is 120V. NTSC or HD (1125i & 525P) signal generator is connected to the antenna of the PTV. (Color bar pattern of 100 IRE white and 7.5 IRE black.)
   - All Picture and Audio adjustments are set to Normalize.
     TV ANT/CABLE - (Set-Up Menu) in TV/ANT Mode
     Volume - Min
     TV/Video SW - TV position
     Audio Mode - Stereo
   - Voltage readings are nominal and may vary ±10% on active devices. Some voltage reading will vary with signal strength and picture content.
   - Supply voltages are nominal.
2. Ground symbol ⏚ indicates ground lead connection of meter. Incorrect ground connection will result in erroneous readings.

*CAUTION: **Incorrect ground connection of the test equipment will result in erroneous readings.***

Medición de Voltajes

1. Medición de voltaje:
   - El voltaje de entrada al Receptor es de 120V de Corriente Alterna. Un generador de patrones con formato NTSC se conecta a la entrada de la antena. (Patrón de Barras de Colores con 100 IREs para el Blanco y 7.5 IREs para el Negro.)
   - Los ajustes de los Menus Picture y Audio se normalizan.
     En el Menú Set-Up, en la opción ANTENA, se selecciona el modo de CABLE.
     El nivel de Volumen se minimiza.
     De los modos TV y Video, seleccionar el modo TV.
     Seleccionar modo Estereo del Audio.
   - Las mediciones de los voltajes son nominales y pueden variar hasta 10% en componentes en funcionamiento. Las lecturas de los voltajes pueden variar por la potencia de la señal y el contenido de la imagen.
   - Las fuentes de voltajes son nominales.
2. El símbolo ⏚ indica el tipo de tierra que se utiliza en la conexión del medidor.

***PRECAUCION:** Si no se utiliza la conexión a la tierra adecuada, se obtendrán mediciones equivocadas y podría dañar el equipo de medición.*

IMPORTANT SAFETY NOTICE

THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES THAT ARE IMPORTANT FOR PROTECTION FROM X-RADIATION, FIRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING IT IS ESSENTIAL THAT ONLY MANUFACTURERS SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS DESIGNATED WITH A ⚠ IN THE SCHEMATIC.

NOTA DE SEGURIDAD

LOS DIAGRAMAS ELÉCTRICOS INCLUYEN CARACTERÍSTICAS ESPECIALES MUY IMPORTANTES PARA LA PROTECCIÓN CONTRA RAYOS-X, QUEMADURAS Y DESCARGAS ELÉCTRICAS. CUANDO SE DE SERVICIO ES IMPORTANTE USAR PARA REEMPLAZO DE COMPONENTES CRITICOS, SOLO PARTES ESPECIFICADAS POR EL FABRICANTES. LOS COMPONENTES CRITICOS ESTAN SEÑALADOS EN LOS DIAGRAMAS POR EL SIMBOLO ⚠.

Note:

Voltages and waveforms are on Sheet 3 Side A and Sheet 5 Side B, respectively.

Nota:

Los voltajes y formas de onda se localizan en el lado A de la página 3 y en el lado B de la página 5 respectivamente.

CHIP TRANSISTOR LEAD DESIGNATION

B E C

IDENTIFICACIÓN DE TERMINALES PARA TRANSISTORES EN *CHIP*

B E C

J-Board Schematic (Right Portion)
PT-51DX80A/CA & PT-61DX80A/CA/VA

Diagrama Eléctrico Tarjeta J (Sección Derecha)
MTC9908031C1 & MTC9908032C1

A-Board - Tarjeta A

IC001

Pin	V	Pin	V
1	4.83	33	4.90
2	0.00	34	0.00
3	n.c	35	4.95
4	4.90	36	n.c
5	4.95	37	n.c
6	4.91	38	GND
7	1.85	39	4.55
8	4.95	40	0.00
9	1.26	41	0.00
10	2.36	42	0.00
11	4.65	43	0.00
12	0.00	44	0.00
13	4.91	45	3.60
14	0.00	46	1.46
15	2.47	47	1.46
16	0.00	48	0.00
17	4.93	49	4.95
18	4.94	50	1.28
19	0.00	51	1.28
20	0.00	52	4.95
21	2.21	53	n.c
22	4.96	54	4.95
23	0.00	55	4.84
24	2.25	56	4.95
25	n.c	57	0.00
26	1.98	58	0.00
27	1.97	59	4.60
28	3.00	60	4.60
29	3.00	61	4.95
30	0.00	62	2.53
31	4.69	63	2.58
32	5.01	64	GND

IC471

Pin	V
1	5.22
2	n.c
3	11.67
4	1.04
5	GND
6	3.92
7	n.c
8	0.62
9	3.00
10	2.99
11	n.c
12	GND
13	4.00
14	3.79
15	5.83
16	3.13

IC002

Pin	V
1	GND
2	GND
3	GND
4	GND
5	4.60
6	4.60
7	GND
8	4.95

IC005

Pin	V
1	10.92
2	GND
3	4.96

IC006

Pin	V
1	4.95
2	4.95
3	GND

IC871

Pin	V
1	11.68
2	GND
3	8.87

IC872

Pin	V
1	GND
2	6.80
3	5.03
4	5.03
5	6.80

IC873

Pin	V
1	GND
2	-22.77
3	-12.00

IC881

Pin	V
1	6.73
2	3.26
3	GND
4	6.73

IC882

Pin	V
1	6.73
2	4.93
3	GND
4	6.73

IC1501

Pin	V
1	6.54
2	5.70
3	5.69
4	GND
5	5.29
6	5.31
7	5.22
8	11.67

IC2101

Pin	V
1	n.c
2	n.c
3	n.c
4	6.88
5	2.42
6	2.61
7	2.61
8	GND
9	2.62
10	1.20
11	n.c
12	4.64
13	3.65
14	3.62
15	2.80
16	4.98
17	2.98
18	2.67
19	2.72
20	4.98
21	2.72
22	n.c
23	4.76
24	n.c

IC7001 / IC7002

Pin	IC7001	IC7002
1	0.00	0.00
2	GND	GND
3	-21.68	-21.67
4	-22.80	-22.78
5	21.93	21.92
6	0.00	-0.05
7	0.00	-0.04
8	-22.79	-22.78
9	0.00	-0.05
10	21.93	21.92
11	-0.38	0.03
12	-22.80	-22.78
13	-0.32	0.02
14	-0.32	0.00
15	0.06	0.00
16	0.06	0.05
17	-22.79	-22.78
18	0.08	0.06

	Q014	Q016	Q471	Q472	Q873	Q874	Q1903	Q1904	Q1905
B	0.00	0.00	0.62	3.92	0.00	4.30	1.72	1.82	6.10
C	8.74	4.95	3.92	11.67	2.80	-1.05	5.90	6.11	11.74
E	GND	0.00	GND	3.30	GND	3.25	1.10	1.22	5.47

	Q1906	Q1907	Q1908	Q1909	Q1910	Q2101	Q2853	Q2854	Q2855
B	1.67	1.71	1.74	6.26	6.65	2.97	1.45	0.00	0.85
C	6.65	6.34	6.27	11.74	11.74	4.98	8.75	0.33	GND
E	1.06	1.10	1.13	5.62	6.02	2.37	0.84	GND	1.58

	Q2862	Q2863	Q2864	Q2865	Q2866	Q2868	Q2870	Q2907	Q2938
B	0.00	0.00	0.00	0.00	0.67	0.68	0.67	4.83	0.65
C	8.72	GND	GND	GND	8.72	8.72	8.72	GND	0.00
E	0.00	0.68	0.68	0.67	0.15	0.15	0.15	4.89	GND

	Q2961	Q2962	Q2963	Q2967	Q2969	Q2971	Q7006	Q7007
B	3.07	4.28	0.00	0.70	0.70	0.71	-22.75	-22.77
C	8.72	8.72	8.72	8.72	8.72	8.72	-21.71	-21.69
E	2.46	3.66	0.00	0.15	0.15	0.15	-22.81	-22.79

B-Board - Tarjeta B

IC451

Pin	V
1	GND
2	19.30
3	34.04
4	2.66
5	2.65
6	34.15
7	1.66

IC801 ⏚

Pin	V
1	1.14
2	0.32
3	0.16
4	0.15
5	GND
6	7.64
7	23.13
8	6.35
9	6.14

IC802

Pin	V
1	138.40
2	10.23
3	GND

IC811

Pin	V
1	11.20
2	10.22
3⏚	GND
4⏚	6.08

IC831

Pin	V
1	14.59
2	GND
3	11.82

IC841

Pin	V
1	22.20
2	9.14
3	GND
4	9.02
5	n.c

	Q482	Q552	Q802 ⏚	Q803 ⏚
B	0.63	-0.12	0.09	23.13
C	0.08	137.80	23.11	6.35
E	GND	GND	GND	0.00

	Q810	Q831	Q832	Q833
B	0.71	137.90	22.08	-22.94
C	0.08	0.00	-0.03	22.02
E	GND	138.30	22.26	-23.24

	Q860	Q1501	Q1502	Q1503
B	16.21	36.80	39.94	11.20
C	0.00	137.90	137.90	0.72
E	15.16	40.00	39.50	11.36

	Q1504	Q1505	Q1507
B	11.77	0.70	10.20
C	604.00	10.69	11.72
E	11.27	0.37	9.64

	Q801 ⏚
D	108.60
G	7.40
S	0.00

LR-Board - Tarjeta LR

	Q3351	Q353	Q354
B	7.92	11.65	168.50
C	0.95	167.10	217.60
E	7.98	11.10	167.90

	Q355	Q356
B	167.10	167.80
C	0.42	8.30
E	167.70	167.80

LG-Board - Tarjeta LG

	Q3361	Q373	Q374
B	7.91	11.65	163.60
C	1.29	162.10	217.60
E	7.70	11.10	163.00

	Q375	Q376
B	162.20	162.90
C	0.43	8.13
E	162.80	162.90

LB-Board - Tarjeta LB

	Q3371	Q393	Q394
B	7.90	11.65	164.70
C	1.45	163.20	217.60
E	7.99	11.18	164.10

	Q395	Q396
B	163.20	0.39
C	0.44	8.17
E	163.80	0.87

N-Board - Tarjeta N

Pin	IC101	IC2201
1	2.19	GND
2	2.22	4.60
3	2.17	4.55
4	2.44	2.05
5	2.46	0.07
6	2.64	4.65
7	2.64	2.69
8	GND	8.76
9	2.65	4.30
10	1.19	4.42
11	2.70	4.37
12	2.32	4.30
13	3.67	3.03
14	3.68	4.42
15	2.74	3.74
16	4.98	4.40
17	2.04	4.43
18	2.05	4.42
19	1.95	0.54
20	4.98	4.45
21	1.95	GND
22	n.c	4.33
23	2.46	0.54
24	2.04	4.29
25		4.30
26		4.48
27		4.64
28		5.10

	Q102
B	2.04
C	0.00
E	4.98

D-Board - Tarjeta D

Pin	IC751	IC752
1	7.86	4.37
2	4.37	6.80
3	5.60	6.79
4	GND	GND
5	0.00	3.38
6	0.00	3.56
7	0.85	n.c
8	11.79	11.79

	Q502	Q581	Q751
B	0.09	7.40	-3.08
C	13.13	11.80	5.54
E	GND	6.70	GND

	Q753	Q1581	Q1582
B	-12.00	11.79	5.97
C	11.80	-0.03	11.78
E	-11.80	11.80	6.03

	Q752
D	39.54
G	7.88
S	GND

J-Board - Tarjeta J

IC3001

Pin	V	Pin	V
1	3.86	33	4.41
2	4.33	34	4.50
3	3.86	35	GND
4	4.33	36	n.c
5	4.34	37	4.29
6	n.c	38	n.c
7	4.70	39	3.91
8	3.86	40	n.c
9	4.33	41	4.17
10	3.86	42	8.65
11	4.33	43	n.c
12	4.33	44	GND
13	n.c	45	4.64
14	4.71	46	n.c
15	4.33	47	n.c
16	4.33	48	n.c
17	3.86	49	4.64
18	4.33	50	4.35
19	4.34	51	n.c
20	n.c	52	4.36
21	n.c	53	4.17
22	3.86	54	4.36
23	4.33	55	n.c
24	n.c	56	3.92
25	4.33	57	GND
26	n.c	58	4.26
27	n.c	59	4.33
28	n.c	60	4.51
29	n.c	61	4.33
30	n.c	62	4.33
31	n.c	63	4.19
32	GND	64	4.33

IC411

Pin	V	Pin	V
1	4.40	22	5.66
2	2.84	23	6.53
3	6.53	24	2.36
4	GND	25	n.c
5	0.90	26	n.c
6	0.00	27	GND
7	n.c	28	n.c
8	0.09	29	GND
9	2.23	30	n.c
10	1.08	31	n.c
11	1.67	32	2.83
12	5.06	33	0.66
13	4.50	34	GND
14	4.50	35	n.c
15	8.69	36	GND
16	2.81	37	6.19
17	n.c	38	1.84
18	4.29	39	2.63
19	GND	40	2.69
20	1.33	41	0.61
21	3.10	42	1.87

IC753 / IC2402

Pin	IC753	IC2402
1	n.c	4.35
2	GND	4.35
3	GND	4.35
4	GND	GND
5	1.84	4.33
6	1.80	4.34
7	0.72	4.34
8	8.72	8.54

IC2301 / IC2302

Pin	IC2301	IC2302
1	-16.03	-16.03
2	-16.03	-16.03
3	-16.03	-16.03
4	-12.87	-5.31
5	-5.03	-5.03
6	-5.77	-5.77
7	n.c	n.c
8	-2.12	-2.13
9	-13.75	-14.36
10	GND	GND
11	0.01	0.01
12	2.11	2.15
13	n.c	n.c
14	15.93	15.93
15	-5.03	-5.05
16	15.93	15.93
17	-16.03	-16.04
18	-16.03	-16.04
19	-16.03	-16.04
20	-16.03	-16.04

IC521

Pin	V
K	6.53
A	0.00
R	2.49

IC874

Pin	V
1	8.72
2	5.06
3	GND

IC2401 / IC3152 / IC3153

Pin	IC2401	IC3152	IC3153
1	4.32	GND	0.05
2	4.32	2.35	n.c
3	4.28	3.00	2.25
4	4.32	0.40	2.88
5	1.48	3.41	GND
6	4.30	3.02	2.39
7	0.50	5.01	2.58
8	0.83	GND	2.39
9	0.77	n.c	2.58
10	GND	0.06	2.53
11	4.29	n.c	0.35
12	4.32	5.02	0.25
13	1.66	1.24	0.31
14	2.78	2.21	0.31
15	4.36	2.79	5.01
16	4.50	0.80	5.01
17	4.50	2.19	n.c
18	4.30	1.54	n.c
19	1.69	5.02	n.c
20	2.54	0.10	n.c
21	4.31	n.c	
22	4.32	n.c	
23	4.34	n.c	
24	4.31	GND	
25	4.30		
26	8.58		
27	4.32		
28	4.30		
29	1.68		
30	1.70		

IC3155 / IC3156 / IC3157 / IC3158

Pin	IC3155	IC3156	IC3157	IC3158
1	3.20	0.31	4.44	4.46
2	3.20	0.66	0.00	0.11
3	3.67	0.80	3.02	3.01
4	0.00	1.08	GND	GND
5	0.10	0.00	3.02	3.01
6	0.10	0.00	3.01	3.01
7	0.00	0.00	7.71	0.11
8	0.00	0.00	4.44	4.45
9	5.01	0.11	4.44	4.45
10	0.00	0.00	GND	GND
11	3.20	0.00	4.40	4.46
12	0.10	0.00	7.71	0.11
13	0.10	0.00	8.61	8.61
14	8.61	0.15	4.44	4.46
15		0.05	GND	GND
16		8.61	4.44	4.46

	Q2301	Q2302	Q2303	Q2351	Q2352	Q2353	Q2354	Q2355	Q2356	Q2357	Q2401	Q2402	Q2403	Q2404	Q3031
B	0.73	0.74	4.08	0.00	0.00	10.91	0.00	10.91	15.62	0.00	0.00	0.00	4.33	0.00	3.93
C	0.28	0.29	8.58	0.00	4.86	0.00	10.91	0.00	0.00	4.86	0.00	0.00	8.53	0.00	GND
E	GND	GND	3.47	0.00	GND	10.24	0.00	10.24	8.53	GND	GND	GND	3.70	0.00	4.60

	Q3032	Q3051	Q3054	Q3151	Q3152	Q3153	Q3154	Q3155	Q3156	Q3157	Q3158	Q3159	Q3160	Q3161	Q3162
B	4.25	4.27	4.90	3.32	3.22	3.38	7.12	3.18	3.43	7.12	3.43	3.91	6.19	1.95	0.00
C	8.66	8.71	GND	5.01	5.01	2.75	3.38	7.13	8.60	3.43	8.60	8.56	3.96	7.31	8.60
E	3.59	3.63	4.21	2.66	2.85	8.60	7.73	2.55	2.80	7.72	2.80	3.27	6.83	2.57	0.00

	Q3163	Q3164	Q3165	Q3166	Q3167	Q3168	Q3169	Q3170	Q3171	Q3172	Q3175	Q3178	Q3179	Q3180	Q3185
B	2.56	0.00	0.00	8.60	3.33	6.02	2.82	6.07	2.02	2.64	3.92	0.00	0.00	3.02	3.39
C	GND	8.61	8.60	0.00	8.60	8.60	GND	8.62	6.07	2.03	8.60	8.60	8.60	GND	3.39
E	3.25	0.00	0.00	8.60	3.95	5.36	3.49	5.40	1.40	8.62	3.27	0.66	0.00	3.68	2.86

	Q3186	Q3187	Q3188	Q3189	Q3190	Q3191	Q3192	Q3193	Q3194	Q3195	Q3196	Q3199	Q3200	Q3201
B	7.28	2.72	2.53	2.54	2.54	8.60	0.00	0.68	0.68	3.01	3.01	3.02	3.02	3.01
C	3.42	6.19	GND	GND	GND	0.00	7.71	0.10	0.10	GND	GND	GND	GND	GND
E	7.90	2.13	3.20	3.20	3.20	8.60	GND	GND	GND	3.68	3.67	3.67	3.66	3.67

SR-Board - Tarjeta SR

	Q957	Q958	Q963	Q964
B	129.20	9.02	137.00	0.00
C	79.10	97.90	129.20	8.48
E	128.60	8.60	137.50	0.35

SG-Board - Tarjeta SG

	Q902	Q903	Q908	Q951
B	2.44	8.07	18.17	17.59
C	7.44	18.17	33.92	0.00
E	1.45	7.44	17.16	18.17

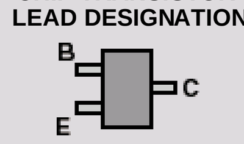
	Q952	Q953	Q954	Q955
B	17.60	18.18	17.04	128.80
C	33.91	33.92	0.00	78.60
E	17.04	17.64	17.62	129.30

	Q956	Q961	Q962
B	9.15	137.00	0.91
C	86.10	129.40	8.62
E	8.61	137.50	0.36

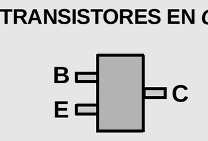
SB-Board - Tarjeta SB

	Q959	Q960	Q965	Q966
B	128.60	9.12	137.00	0.90
C	78.20	74.70	129.20	8.59
E	129.20	8.60	137.50	0.38

CHIP TRANSISTOR LEAD DESIGNATION



IDENTIFICACIÓN DE TERMINALES PARA TRANSISTORES EN *CHIP*



Connectors - Conectores

A19 (A-Board) to DP (DP-Board)

Pin	V	Pin	V
1	0.00	34	4.89
2	0.00	35	5.00
3	0.00	36	5.00
4	0.00	37	3.19
5	0.00	38	2.99
6	0.71	39	2.99
7	0.00	40	0.00
8	0.03	41	0.00
9	0.60	42	3.33
10	0.00	43	1.07
11	0.37	44	3.23
12	0.65	45	3.23
13	0.00	46	0.00
14	0.20	47	2.94
15	0.00	48	0.00
16	0.81	49	2.79
17	0.17	50	0.00
18	0.00	51	2.83
19	2.42	52	0.00
20	0.00	53	2.97
21	2.42	54	2.98
22	0.00	55	0.00
23	3.00	56	0.81
24	0.00	57	0.17
25	0.00	58	0.00
26	3.69	59	3.68
27	0.00	60	0.00
28	3.29	61	3.67
29	3.19	62	0.00
30	8.84	63	3.68
31	5.22	64	0.00
32	8.63	65	0.00
33	3.34		

Pin	A25 (A-Board) to YC1 (YC-Board)	A26 (A-Board) to YC2 (YC-Board)
1	4.57	0.00
2	11.44	3.01
3	3.64	0.00
4	3.29	2.42
5	2.88	4.92
6	2.98	2.43
7	0.00	0.00
8	6.22	0.17
9	4.89	0.00
10	2.98	0.81

Pin	A71 (A-Board) to DC1 (DC-Board)	A72 (A-Board) to DC2 (DC-Board)	A73 (A-Board) to DC3 (DC-Board)	A74 (A-Board) to DC4 (DC-Board)
1	0.00	0.00	4.53	0.00
2	-0.32	4.91	4.53	0.72
3	0.00	0.00	0.00	0.72
4	-0.04	0.00	4.77	0.72
5	0.06	11.67	0.00	0.00
6	0.05	4.91	0.56	0.00
7	0.00	-12.09	4.89	0.00
8	0.00	0.00	4.90	0.00

Pin	A60 (A-Board) to X60 (X-Board)	A61 (A-Board) to X61 (X-Board)
1	0.00	0.00
2	0.00	0.00
3	0.16	2.81
4	0.16	0.00
5	0.17	0.00
6	0.00	4.77
7	0.00	0.00
8	0.00	0.60
9	0.00	0.03
10	0.00	0.00
11	3.69	0.63
12	0.00	0.36
13	0.00	0.00
14	3.69	0.00
15	0.00	4.55
16	3.69	4.84
17	0.00	0.00
18	0.00	3.24
19	2.38	6.74
20	8.78	0.00
21	0.00	1.86
22	0.70	0.00
23	4.90	2.99
24	11.66	3.00
25	0.00	0.08

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NOTA DE SEGURIDAD

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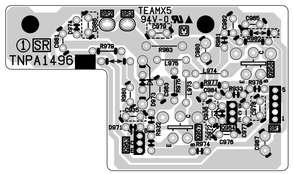
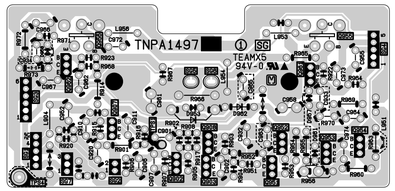
A | B | C | D | E | F | G | H

1

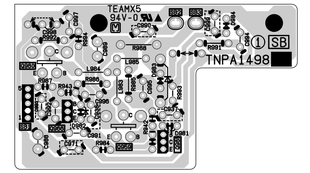
SR-Board Layout - TNPA1496
Diagrama del Circuito Impreso (SR) - TNPA1496



SG-Board Layout - TNPA1497
Diagrama del Circuito Impreso (SG) - TNPA1497

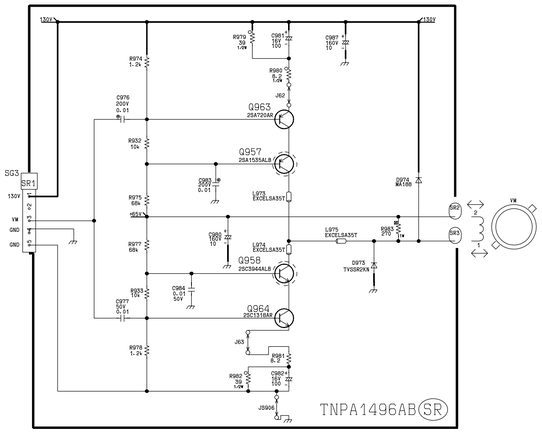


SB-Board Layout - TNPA1498
Diagrama del Circuito Impreso (SB) - TNPA1498

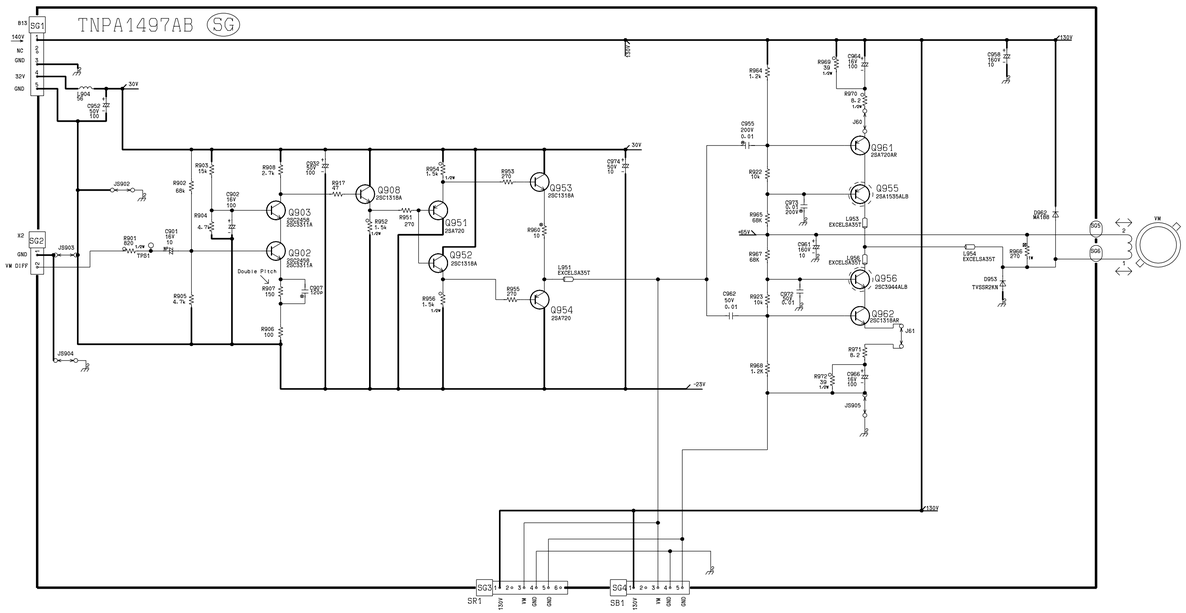


2

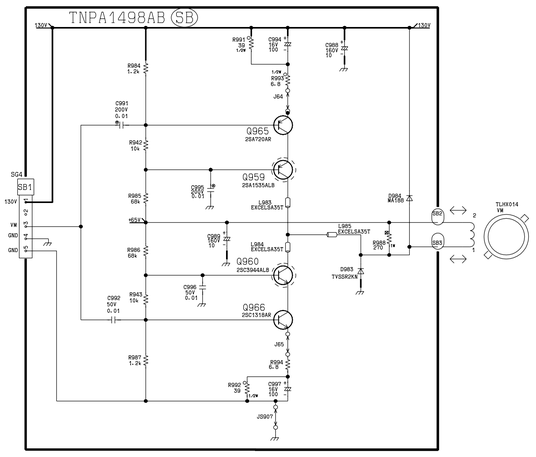
SR-Board Schematic
Diagrama Eléctrico (SR)



SG-Board Schematic
Diagrama Eléctrico (SG)



SB-Board Schematic
Diagrama Eléctrico (SB)



3

4

Notes:

The board layouts were modified to enhance and display traces otherwise hidden by a mask.

Voltages and waveforms are on Sheet 3 Side A and Sheet 5 Side B, respectively.

Notas:

Los diagramas de circuito impreso fueron modificados para mayor claridad.

Los voltajes y formas de onda se localizan en el lado A de la página 3 y en el lado B de la página 5 respectivamente.

5

Boards Designation

- A-Board - Main Signal
- B-Board - Power Supply
- D-Board - Diode Mod. H. Drive
- DC-Board - Digital Convergence
- DP-Board - Digital Processing
- G-Board - Front AV Connections
- H-Board - AV Terminal (YUV)
- J-Board - AV Switch, Audio AMP etc.
- K-Board - Customer Controls
- LB/LG/LR-Boards - Blue, Green & Red CRT Boards
- N-Board - VIF, MTS
- R-Board - Remote Control Sensor
- SB/SG/SR-Boards - VM for Blue, Green & Red
- T-Board - Sub Power
- X-Board - RGB Signal Sync Out
- YC-Board - 3D Y/C

Indice de Tarjetas

- Tarjeta A - Chasis Principal
- Tarjeta B - Fuente de Alimentación
- Tarjeta D - Impulsor Horiz. de la Modulación del Diodo
- Tarjeta DC - Convergencia Digital
- Tarjeta DP - Procesamiento Digital
- Tarjeta G - Entradas frontales de AV
- Tarjeta H - Terminales AV (YUV)
- Tarjeta J - Interruptor AV, Audio AMP etc.
- Tarjeta K - Ajustes de Usuario
- Tarjetas LB/LG/LR - Tarjetas Roja, Azul y Verde para los TRC
- Tarjeta N - VIF, MTS
- Tarjeta R - Sensor del Control Remoto
- Tarjetas SB/SG/SR - VM para el Rojo, Azul y Verde
- Tarjeta T - Poder Alterno
- Tarjeta X - Señal de Sync RGB
- Tarjeta YC - 3D Y/C

Schematic Notes

1. Resistors are carbon 1/4W unless noted otherwise.
2. Capacitors are ceramic 50V unless noted otherwise.
3. Coil value notes is inductance in μH.
4. Test point indicated by ▼; Test point but no pin ∫.
5. Components indicated with ⚠ are critical parts and replacement should be made with manufacture specified replacement parts only.
6. ▬▬ (**BOLD LINE**) indicates the route of B+ supply.
7. The schematic diagrams are current at the time of printing and are subject to change without notice.
8. Ground symbol ⏚ indicates **HOT GROUND CONNECTION**; ⏚ indicates COLD GROUND.

NOTE: All other component symbols are used for engineering design purposes.

Notas de los Diagramas

1. Las Resistencias son de Carbón de 1/4W, a menos que se indique otra característica.
2. Los Capacitores son de Cerámica para 50V, a menos que se indique otra característica.
3. El valor indicado de las Bobinas es la inductancia expresada en μH.
4. Los puntos de prueba en la terminal de algún componente son indicados por ▼ Los puntos de prueba fuera de los componentes se indican con ∫.
5. Los componentes señalados con el símbolo ⚠ son considerados componentes críticos y deben ser reemplazados sólo con las partes especificadas por el fabricante.
6. ▬▬ (**LINEA GRUESA**) indica las líneas de alimentación de los Voltajes B+.
7. Los diagramas eléctricos están sujetos a cambio sin previo aviso.
8. El símbolo ⏚ indica que es una conexión a **Tierra Caliente** y el símbolo ⏚ indica conexión a **Tierra Fría**.

NOTA: Los demas símbolos de componentes incluidos son usados con fines de diseño.

Waveform Measurements

1. ① indicates waveform measurement. (Measurement can be taken at the best accessible location in common to the indicated point.)
2. Taken with an NTSC signal generator connected to the antenna terminal. (NTSC color bar pattern of 8 bars of EIA colors, 100 IRE white and 7.5 IRE black.)
3. Customer Controls (Picture/Audio Menu) are set to Normalize. Volume is set to "MIN".
4. All video and color waveforms are taken with a wideband scope and a probe with low capacitance (10 to 1). Shape and peak altitudes may vary depending on the type of Oscilloscope used and its settings.
5. Ground symbol ⏚ shown on waveform number indicates (Hot) ground lead connection of the Oscilloscope.

CAUTION: Incorrect ground connection of the test equipment will result in erroneous readings.

The waveforms are taken in the order of circuit flow through the various sections.

Medición de Formas de Onda

1. Un símbolo como ① indica el punto para medir una señal. (La medición puede hacerse en el punto con mayor accesibilidad, siempre que sea común al indicado.)
2. Se midieron utilizando un generador con formato NTSC conectado a la terminal de la antena. (Patrón de 8 Barras de Colores EAI, formato NTSC de 100 IREs para el Blanco y 7.5 IREs para el Negro.)
3. Los ajustes de usuario de los Menus PICTURE y AUDIO se normalizaron. Posteriormente el nivel de volumen se ajusta al mínimo.
4. Las formas de onda de Video y Color fueron tomadas con un osciloscopio de banda alta y con un punta de prueba de baja capacitancia (10 a 1). La forma y amplitud de las ondas puede variar segun el tipo de osciloscopio que se utilice y sus características.
5. El símbolo de tierra ⏚ que aparece junto al número de la forma de onda, indica que se utiliza conexión a **Tierra Caliente** en el extremo negativo de la punta de prueba.

PRECAUCION: Si no se utiliza la conexión a la tierra adecuada, se obtendrán mediciones equivocadas y podría dañar el equipo de medición.

Voltage Measurements

1. Voltage measurement:
   - AC input to the PTV is 120V. NTSC or HD (1125i & 525P) signal generator is connected to the antenna of the PTV. (Color bar pattern of 100 IRE white and 7.5 IRE black.)
   - All Picture and Audio adjustments are set to Normalize. TV ANT/CABLE - (Set-Up Menu) in TV/ANT Mode Volume - Min TV/Video SW - TV position Audio Mode - Stereo
   - Voltage readings are nominal and may vary ±10% on active devices. Some voltage reading will vary with signal strength and picture content.
   - Supply voltages are nominal.
2. Ground symbol ⏚ indicates ground lead connection of meter. Incorrect ground connection will result in erroneous readings.

*CAUTION: **Incorrect ground connection of the test equipment will result in erroneous readings.***

Medición de Voltajes

1. Medición de voltaje:
   - El voltaje de entrada al Receptor es de 120V de Corriente Alterna. Un generador de patrones con formato NTSC se conecta a la entrada de la antena. (Patrón de Barras de Colores con 100 IREs para el Blanco y 7.5 IREs para el Negro.)
   - Los ajustes de los Menus Picture y Audio se normalizan. En el Menú Set-Up, en la opción ANTENA, se selecciona el modo de CABLE. El nivel de Volumen se minimiza. De los modos TV y Video, seleccionar el modo TV. Seleccionar modo Estereo del Audio.
   - Las mediciones de los voltajes son nominales y pueden variar hasta 10% en componentes en funcionamiento. Las lecturas de los voltajes pueden variar por la potencia de la señal y el contenido de la imagen.
   - Las fuentes de voltajes son nominales.
2. El símbolo ⏚ indica el tipo de tierra que se utiliza en la conexión del medidor.

PRECAUCION: Si no se utiliza la conexión a la tierra adecuada, se obtendrán mediciones equivocadas y podría dañar el equipo de medición.

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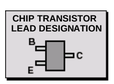
CHIP TRANSISTOR LEAD DESIGNATION



IDENTIFICACIÓN DE TERMINALES PARA TRANSISTORES EN *CHIP*

MTC99080I31C1 & MTC99080I32C1

Diagramas Eléctricos y de Circuito Impreso Tarjetas SR, SG & SB

Sheet 3 of 10 Side B

Página 3 de 10 Lado B

SR, SG & SB-Board Schematics & Layouts

PT-51DX80A/CA & PT-61DX80A/CA/VA

X-Board Schematic, Left Portion
Diagrama Eléctrico (X), Sección Izquierda

IC2501 Pin Designation

Pin #	Description	Pin #	Description	Pin #	Description
1	P_R input	18	N.C.	34	<S.S.C.C. Part> coring bias
2	VM pre-amp gain control	19	V_{CC}	35	Differential signal bias 1
3	VM pre-amp input	20	DSC detector output	36	<L.S.C.C and S.S.C.C. parts> separation level control
4	VM pre-amp output	21	DSC small signal gain control		
5	Sub-screen Y_B input	22	DSC input	37	Differential signal bias 2
6	Main-screen Y_B input	23	DSC bias	38	<S.S.C.C. part> limiter output
7	VM limiter amp input	24	Pre-correction primary differential signal output	39	Y delay line change-over switch 1
8	VM limiter amp gain control			40	Y delay line change-over switch 2
9	VM limiter amp output	25	Sharpness mute control	41	N.C.
10	Sub-screen amp output	26	Sharpness control	42	GND
11	Sub-screen amp gain control	27	Y output	43	Clamp pulse input
12	Sub-screen amp input	28	<L.S.C.C. part> gain control	44	N.C.
13	P_B output	29	<L.S.C.C. part> bias	45	Y input
14	N.C.	30	Secondary differential signal input	46	C delay line change-over switch 1
15	P_B output	31	<S.S.C.C. part> gain control	47	P_B input
16	DSC large signal gain control	32	Post-correction primary differential signal output	48	C delay line change-over switch 2
17	Pre-correction primary differential signal input	33	<S.S.C.C. part> coring conrtrol		

Schematic Notes

1. Resistors are carbon 1/4W unless noted otherwise.
2. Capacitors are ceramic 50V unless noted otherwise.
3. Coil value notes is inductance in µH.
4. Test point indicated by ▼, Test point but no pin ▽.
5. Components indicated with ⚠ are critical parts and replacement should be made with manufacture specified replacement parts only.
6. ▬▬ (**BOLD LINE**) indicates the route of B+ supply.
7. The schematic diagrams are current at the time of printing and are subject to change without notice.
8. Ground symbol ⏚ indicates **HOT GROUND CONNECTION**; ⏚ indicates COLD GROUND.

NOTE: All other component symbols are used for engineering design purposes.

Waveform Measurements

1. ③ indicates waveform measurement. (Measurement can be taken at the best accessible location in common to the indicated point.)
2. Taken with an NTSC signal generator connected to the antenna terminal. (NTSC color bar pattern of 8 bars of EIA colors, 100 IRE white and 7.5 IRE black.)
3. Customer Controls (Picture/Audio Menu) are set to Normalize. Volume is set to "MIN".
4. All video and color waveforms are taken with a wideband scope and a probe with low capacitance (10 to 1). Shape and peak altitudes may vary depending on the type of Oscilloscope used and its settings.
5. Ground symbol ⏚ shown on waveform number indicates (Hot) ground lead connection of the Oscilloscope.

CAUTION: Incorrect ground connection of the test equipment will result in erroneous readings.

The waveforms are taken in the order of circuit flow through the various sections.

Voltage Measurements

1. Voltage measurement:
   - AC input to the PTV is 120V. NTSC or HD (1125i & 525P) signal generator is connected to the antenna of the PTV. (Color bar pattern of 100 IRE white and 7.5 IRE black.)
   - All Picture and Audio adjustments are set to Normalize.
   TV ANTICABLE - (Set-Up Menu) in TV/ANT Mode
   Volume - Min
   TV/Video SW - TV position
   Audio Mode - Stereo
   - Voltage readings are nominal and may vary ±10% on active devices. Some voltage reading will vary with signal strength and picture content.
   - Supply voltages are nominal.
2. Ground symbol ⏚ indicates ground lead connection of meter. Incorrect ground connection will result in erroneous readings.

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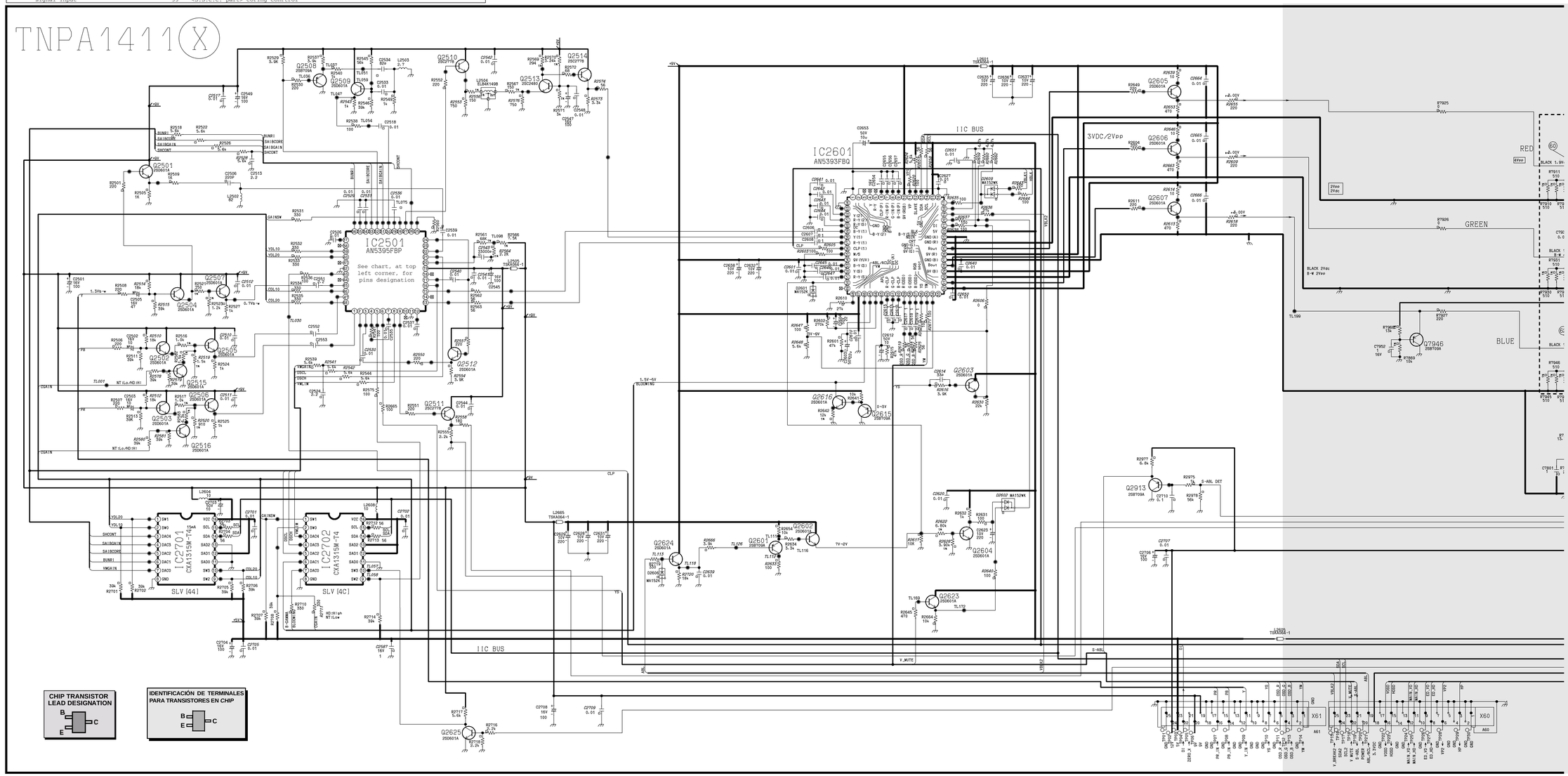


Diagrama Eléctrico
Tarjeta X
(Sección Izquierda)
MTC99080331C1 & MTC9908032C1

Sheet 4 of 10
Side A

Página 4 de 10
Lado A

X-Board Schematic
(Left Portion)
PT-51DX80A/CA & PT-61DX80A/CA/VA

Notas de los Diagramas

1. Las Resistencias son de Carbón de 1/4W, a menos que se indique otra característica.
2. Los Capacitores son de Cerámica para 50V, a menos que se indique otra característica.
3. El valor indicado de las Bobinas es la inductancia expresada en µH.
4. Los puntos de prueba en la terminal de algún componente son indicados por ▼ Los puntos de prueba fuera de los componentes se indican con ▏.
5. Los componentes señalados con el símbolo ⚠ son considerados componentes críticos y deben ser reemplazados sólo con las partes especificadas por el fabricante.
6. ▬▬ (**LINEA GRUESA**) indica las líneas de alimentación de los Voltajes B+.
7. Los diagramas eléctricos están sujetos a cambio sin previo aviso.
8. El símbolo ⏚ indica que es una conexión a **Tierra Caliente** y el símbolo ⏚ indica conexión a **Tierra Fría**.

NOTA: Los demas símbolos de componentes incluidos son usados con fines de diseño.

Medición de Voltajes

1. Medición de voltaje:
   - El voltaje de entrada al Receptor es de 120V de Corriente Alterna. Un generador de patrones con formato NTSC se conecta a la entrada de la antena. (Patrón de Barras de Colores con 100 IREs para el Blanco y 7.5 IREs para el Negro.)
   - Los ajustes de los Menus Picture y Audio se normalizan.
   En el Menú Set-Up, en la opción ANTENA, se selecciona el modo de CABLE.
   El nivel de Volumen se minimiza.
   De los modos TV y Video, seleccionar el modo TV.
   Seleccionar modo Estereo del Audio.
   - Las mediciones de los voltajes son nominales y pueden variar hasta 10% en componentes en funcionamiento. Las lecturas de los voltajes pueden variar por la potencia de la señal y el contenido de la imagen.
   - Las fuentes de voltajes son nominales.
2. El símbolo ⏚ indica el tipo de tierra que se utiliza en la conexión del meddor.

PRECAUCION: Si no se utiliza la conexión a la tierra adecuada, se obtendrán mediciones equivocadas y podría dañar el equipo de medición.

Medición de Formas de Onda

1. Un símbolo como ③, indica el punto para medir una señal. (La medición puede hacerse en el punto con mayor accesibilidad, siempre que sea común al indicado.)
2. Se midieron utilizando un generador con formato NTSC conectado a la terminal de la antena. (Patrón de 8 Barras de Colores EAI, formato NTSC de 100 IREs para el Blanco y 7.5 IREs para el Negro.)
3. Los ajustes de usuario de los Menus PICTURE y AUDIO se normalizaron. Posteriormente el nivel de volumen se ajusta al mínimo.
4. Las formas de onda de Video y Color fueron tomadas con un osciloscopio de banda alta y con un punta de prueba de baja capacitancia (10 a 1). La forma y amplitud de las ondas puede variar según el tipo de osciloscopio que se utilice y sus características.
5. El símbolo de tierra ⏚ que aparece junto al número de la forma de onda, indica que se utiliza conexión a **Tierra Caliente** en el extremo negativo de la punta de prueba.

PRECAUCION: Si no se utiliza la conexión a la tierra adecuada, se obtendrán mediciones equivocadas y podría dañar el equipo de medición.

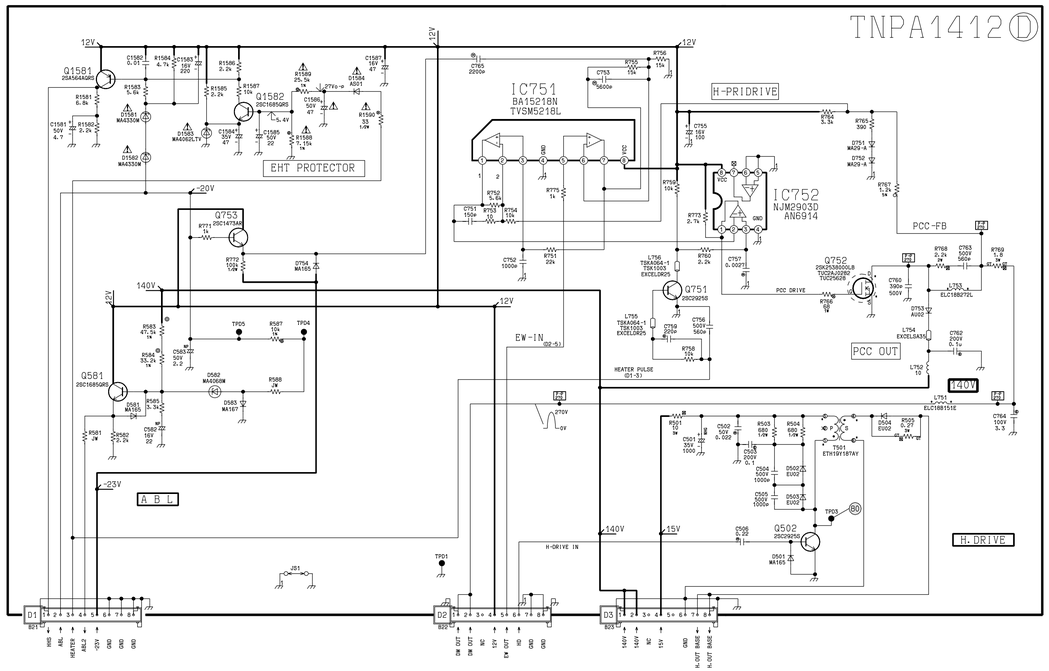
NOTA DE SEGURIDAD

LOS DIAGRAMAS ELÉCTRICOS INCLUYEN CARACTERÍSTICAS ESPECIALES MUY IMPORTANTES PARA LA PROTECCIÓN CONTRA RAYOS-X, QUEMADURAS Y DESCARGAS ELÉCTRICAS. CUANDO SE DE SERVICIO ES IMPORTANTE USAR PARA REEMPLAZO DE COMPONENTES CRITICOS, SOLO PARTES ESPECIFICADAS POR EL FABRICANTES. LOS COMPONENTES CRITICOS ESTAN SEÑALADOS EN LOS DIAGRAMAS POR EL SIMBOLO ⚠.

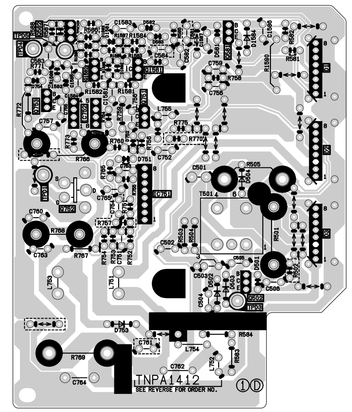
Overlap schematic sections on the gray area.

Sobreponga las secciones de los diagramas eléctricos en el área gris.

D-Board Schematic
Diagrama Eléctrico (D)



D-Board Layout - TNPA1412
Diagrama del Circuito Impreso (D) - TNPA1412



Notes:

The board layouts were modified to enhance and display traces otherwise hidden by a mask.

Voltages and waveforms are on Sheet 3 Side A and Sheet 5 Side B, respectively.

Notas:

Los diagramas de circuito impreso fueron modificados para mayor claridad.

Los voltajes y formas de onda se localizan en el lado A de la página 3 y en el lado B de la página 5 respectivamente.

Schematic Notes

1. Resistors are carbon 1/4W unless noted otherwise.
2. Capacitors are ceramic 50V unless noted otherwise.
3. Coil value notes is inductance in µH.
4. Test point indicated by ⏚; Test point but no pin ⎍.
5. Components indicated with ⚠ are critical parts and replacement should be made with manufacture specified replacement parts only.
6. ▬ (**BOLD LINE**) indicates the route of B+ supply.
7. The schematic diagrams are current at the time of printing and are subject to change without notice.
8. Ground symbol ⏚ indicates **HOT GROUND CONNECTION**; ⏚ indicates COLD GROUND.

NOTE: All other component symbols are used for engineering design purposes.

Notas de los Diagramas

1. Las Resistencias son de Carbón de 1/4W, a menos que se indique otra característica.
2. Los Capacitores son de Cerámica para 50V, a menos que se indique otra característica.
3. El valor indicado de las Bobinas es la inductancia expresada en µH.
4. Los puntos de prueba en la terminal de algún componente son indicados por ⏚ Los puntos de prueba fuera de los componentes se indican con ⎍.
5. Los componentes señalados con el símbolo ⚠ son considerados componentes críticos y deben ser reemplazados sólo con las partes especificadas por el fabricante.
6. ▬ (**LINEA GRUESA**) indica las líneas de alimentación de los Voltajes B+.
7. Los diagramas eléctricos están sujetos a cambio sin previo aviso.
8. El símbolo ⏚ indica que es una conexión a **Tierra Caliente** y el símbolo ⏚ indica conexión a **Tierra Fría**.

NOTA: Los demas símbolos de componentes incluidos son usados con fines de diseño.

Waveform Measurements

1. ③ indicates waveform measurement. (Measurement can be taken at the best accessible location in common to the indicated point.)
2. Taken with an NTSC signal generator connected to the antenna terminal. (NTSC color bar pattern of 8 bars of EIA colors, 100 IRE white and 7.5 IRE black.)
3. Customer Controls (Picture/Audio Menu) are set to Normalize. Volume is set to "MIN".
4. All video and color waveforms are taken with a wideband scope and a probe with low capacitance (10 to 1). Shape and peak altitudes may vary depending on the type of Oscilloscope used and its settings.
5. Ground symbol ⏚ shown on waveform number indicates (Hot) ground lead connection of the Oscilloscope.

CAUTION: Incorrect ground connection of the test equipment will result in erroneous readings.

The waveforms are taken in the order of circuit flow through the various sections.

Medición de Formas de Onda

1. Un símbolo como ③ indica el punto para medir una señal. (La medición puede hacerse en el punto con mayor accesibilidad, siempre que sea común al indicado.)
2. Se midieron utilizando un generador con formato NTSC conectado a la terminal de la antena. (Patrón de 8 Barras de Colores EAI, formato NTSC de 100 IREs para el Blanco y 7.5 IREs para el Negro.)
3. Los ajustes de usuario de los Menus PICTURE y AUDIO se normalizaron. Posteriormente el nivel de volumen se ajusta al mínimo.
4. Las formas de onda de Video y Color fueron tomadas con un osciloscopio de banda alta y con un punta de prueba de baja capacitancia (10 a 1). La forma y amplitud de las ondas puede variar según el tipo de osciloscopio que se utilice y sus características.
5. El símbolo de tierra ⏚ que aparece junto al número de la forma de onda, indica que se utiliza conexión a **Tierra Caliente** en el extremo negativo de la punta de prueba.

PRECAUCION: Si no se utiliza la conexión a la tierra adecuada, se obtendrán mediciones equivocadas y podría dañar el equipo de medición.

Voltage Measurements

1. Voltage measurement:
   - AC input to the PTV is 120V, NTSC or HD (1125i & 525P) signal generator is connected to the antenna of the PTV. (Color bar pattern of 100 IRE white and 7.5 IRE black.)
   - All Picture and Audio adjustments are set to Normalize.
     TV ANTICABLE - (Set-Up Menu) in TV/ANT Mode
     Volume - Min
     TV/Video SW - TV position
     Audio Mode - Stereo
   - Voltage readings are nominal and may vary ±10% on active devices. Some voltage reading will vary with signal strength and picture content.
   - Supply voltages are nominal.
2. Ground symbol ⏚ indicates ground lead connection of meter.
   Incorrect ground connection will result in erroneous readings.

*CAUTION: **Incorrect ground connection of the test equipment will result in erroneous readings.***

Medición de Voltajes

1. Medición de voltaje:
   - El voltaje de entrada al Receptor es de 120V de Corriente Alterna. Un generador de patrones con formato NTSC se conecta a la entrada de la antena. (Patrón de Barras de Colores con 100 IREs para el Blanco y 7.5 IREs para el Negro.)
   - Los ajustes de los Menus Picture y Audio se normalizan.
     En el Menú Set-Up, en la opción ANTENA, se selecciona el modo de CABLE.
     El nivel de Volumen se minimiza.
     De los modos TV y Video, seleccionar el modo TV.
     Seleccionar modo Estereo del Audio.
   - Las mediciones de los voltajes son nominales y pueden variar hasta 10% en componentes en funcionamiento. Las lecturas de los voltajes pueden variar por la potencia de la señal y el contenido de la imagen.
   - Las fuentes de voltajes son nominales.
2. El símbolo ⏚ indica el tipo de tierra que se utiliza en la conexión del medidor.

PRECAUCION: Si no se utiliza la conexión a la tierra adecuada, se obtendrán mediciones equivocadas y podría dañar el equipo de medición.

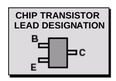
IMPORTANT SAFETY NOTICE

THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES THAT ARE IMPORTANT FOR PROTECTION FROM X-RADIATION, FIRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING IT IS ESSENTIAL THAT ONLY MANUFACTURERS SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS DESIGNATED WITH A ⚠ IN THE SCHEMATIC.

NOTA DE SEGURIDAD

LOS DIAGRAMAS ELÉCTRICOS INCLUYEN CARACTERÍSTICAS ESPECIALES MUY IMPORTANTES PARA LA PROTECCIÓN CONTRA RAYOS-X, QUEMADURAS Y DESCARGAS ELÉCTRICAS. CUANDO SE DE SERVICIO ES IMPORTANTE USAR PARA REEMPLAZO DE COMPONENTES CRITICOS, SOLO PARTES ESPECIFICADAS POR EL FABRICANTES. LOS COMPONENTES CRITICOS ESTAN SEÑALADOS EN LOS DIAGRAMAS POR EL SIMBOLO ⚠.

CHIP TRANSISTOR LEAD DESIGNATION



IDENTIFICACIÓN DE TERMINALES PARA TRANSISTORES EN *CHIP*

X-Board Schematic, Right Portion
Diagrama Eléctrico (X), Sección Derecha

Schematic Notes

1. Resistors are carbon 1/4W unless noted otherwise.
2. Capacitors are ceramic 50V unless noted otherwise.
3. Coil value notes is inductance in µH.
4. Test point indicated by ; Test point but no pin .
5. Components indicated with ⚠ are critical parts and replacement should be made with manufacture specified replacement parts only.
6. ▬▬ (**BOLD LINE**) indicates the route of B+ supply.
7. The schematic diagrams are current at the time of printing and are subject to change without notice.
8. Ground symbol ⏚ indicates **HOT GROUND CONNECTION**; ⏚ indicates COLD GROUND.

NOTE: All other component symbols are used for engineering design purposes.

Waveform Measurements

1. ③ indicates waveform measurement. (Measurement can be taken at the best accessible location in common to the indicated point.)
2. Taken with an NTSC signal generator connected to the antenna terminal. (NTSC color bar pattern of 8 bars of EIA colors, 100 IRE white and 7.5 IRE black.)
3. Customer Controls (Picture/Audio Menu) are set to Normalize. Volume is set to "MIN".
4. All video and color waveforms are taken with a wideband scope and a probe with low capacitance (10 to 1). Shape and peak altitudes may vary depending on the type of Oscilloscope used and its settings.
5. Ground symbol ⏚ shown on waveform number indicates (Hot) ground lead connection of the Oscilloscope.

CAUTION: Incorrect ground connection of the test equipment will result in erroneous readings.

The waveforms are taken in the order of circuit flow through the various sections.

Voltage Measurements

1. Voltage measurement:
   - AC input to the PTV is 120V. NTSC or HD (1125i & 525P) signal generator is connected to the antenna of the PTV. (Color bar pattern of 100 IRE white and 7.5 IRE black.)
   - All Picture and Audio adjustments are set to Normalize.
     TV ANT/CABLE – (Set-Up Menu) in TV/ANT Mode
     Volume - Min
     TV/Video SW - TV position
     Audio Mode - Stereo
   - Voltage readings are nominal and may vary ±10% on active devices. Some voltage reading will vary with signal strength and picture content.
   - Supply voltages are nominal.
2. Ground symbol ⏚ indicates ground lead connection of meter.
   Incorrect ground connection will result in erroneous readings.

*CAUTION: **Incorrect ground connection of the test equipment will result in erroneous readings.***

IMPORTANT SAFETY NOTICE

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TNPA1411 (X)

Overlapping Section
See Sheet 4 Side A for Left Portion of Schematic

Sobreponga aquí la Sección Izquierda
Ver Página 4 Lado A

Diagrama Eléctrico
Tarjeta X
(Sección Derecha)
MTC9908031C1 & MTC9908032C1

Sheet 5 of 10
Side A

Página 5 de 10
Lado A

X - Board Schematic
(Right Portion)
PT-51DX80A/CA & PT-61DX80A/CA/VA

Overlap schematic sections on the gray area.

Sobreponga las secciones de los diagramas eléctricos en el área gris.

CHIP TRANSISTOR LEAD DESIGNATION

IDENTIFICACIÓN DE TERMINALES PARA TRANSISTORES EN *CHIP*

Notas de los Diagramas

1. Las Resistencias son de Carbón de 1/4W, a menos que se indique otra característica.
2. Los Capacitores son de Cerámica para 50V, a menos que se indique otra característica.
3. El valor indicado de las Bobinas es la inductancia expresada en µH.
4. Los puntos de prueba en la terminal de algún componente son indicados por . Los puntos de prueba fuera de los componentes se indican con .
5. Los componentes señalados con el símbolo ⚠ son considerados componentes críticos y deben ser reemplazados sólo con las partes especificadas por el fabricante.
6. ▬▬ (**LINEA GRUESA**) indica las líneas de alimentación de los Voltajes B+.
7. Los diagramas eléctricos están sujetos a cambio sin previo aviso.
8. El símbolo ⏚ indica que es una conexión a **Tierra Caliente** y el símbolo ⏚ indica conexión a **Tierra Fría**.

NOTA: Los demas símbolos de componentes incluidos son usados con fines de diseño.

Medición de Voltajes

1. Medición de voltaje:
   - El voltaje de entrada al Receptor es de 120V de Corriente Alterna. Un generador de patrones con formato NTSC se conecta a la entrada de la antena. (Patrón de Barras de Colores con 100 IREs para el Blanco y 7.5 IREs para el Negro.)
   - Los ajustes de los Menus Picture y Audio se normalizan.
     En el Menú Set-Up, en la opción ANTENA, se selecciona el modo de CABLE.
     El nivel de Volumen se minimiza.
     De los modos TV y Video, seleccionar el modo TV.
     Seleccionar modo Estereo del Audio.
   - Las mediciones de los voltajes son nominales y pueden variar hasta 10% en comportamientos en funcionamiento. Las lecturas de los voltajes pueden variar por la potencia de la señal y el contenido de la imagen.
   - Las fuentes de voltajes son nominales.
2. El símbolo ⏚ indica el tipo de tierra que se utiliza en la conexión del medidor.

PRECAUCION: Si no se utiliza la conexión a la tierra adecuada, se obtendrán mediciones equivocadas y podría dañar el equipo de medición.

Medición de Formas de Onda

1. Un símbolo como ③ indica el punto para medir una señal. (La medición puede hacerse en el punto con mayor accesibilidad, siempre que sea común al indicado.)
2. Se midieron utilizando un generador con formato NTSC conectado a la terminal de la antena. (Patrón de 8 Barras de Colores EAI, formato NTSC de 100 IREs para el Blanco y 7.5 IREs para el Negro.)
3. Los ajustes de usuario de los Menus PICTURE y AUDIO se normalizaron. Posteriormente el nivel de volumen se ajusta al mínimo.
4. Las formas de onda de Video y Color fueron tomadas con un osciloscopio de banda alta y con un punta de prueba de baja capacitancia (10 a 1). La forma y amplitud de las ondas puede variar segùn el tipo de osciloscopio que se utilice y sus características.
5. El símbolo de tierra ⏚ que aparece junto al número de la forma de onda, indica que se utiliza conexión a **Tierra Caliente** en el extremo negativo de la punta de prueba.

PRECAUCION: Si no se utiliza la conexión a la tierra adecuada, se obtendrán mediciones equivocadas y podría dañar el equipo de medición.

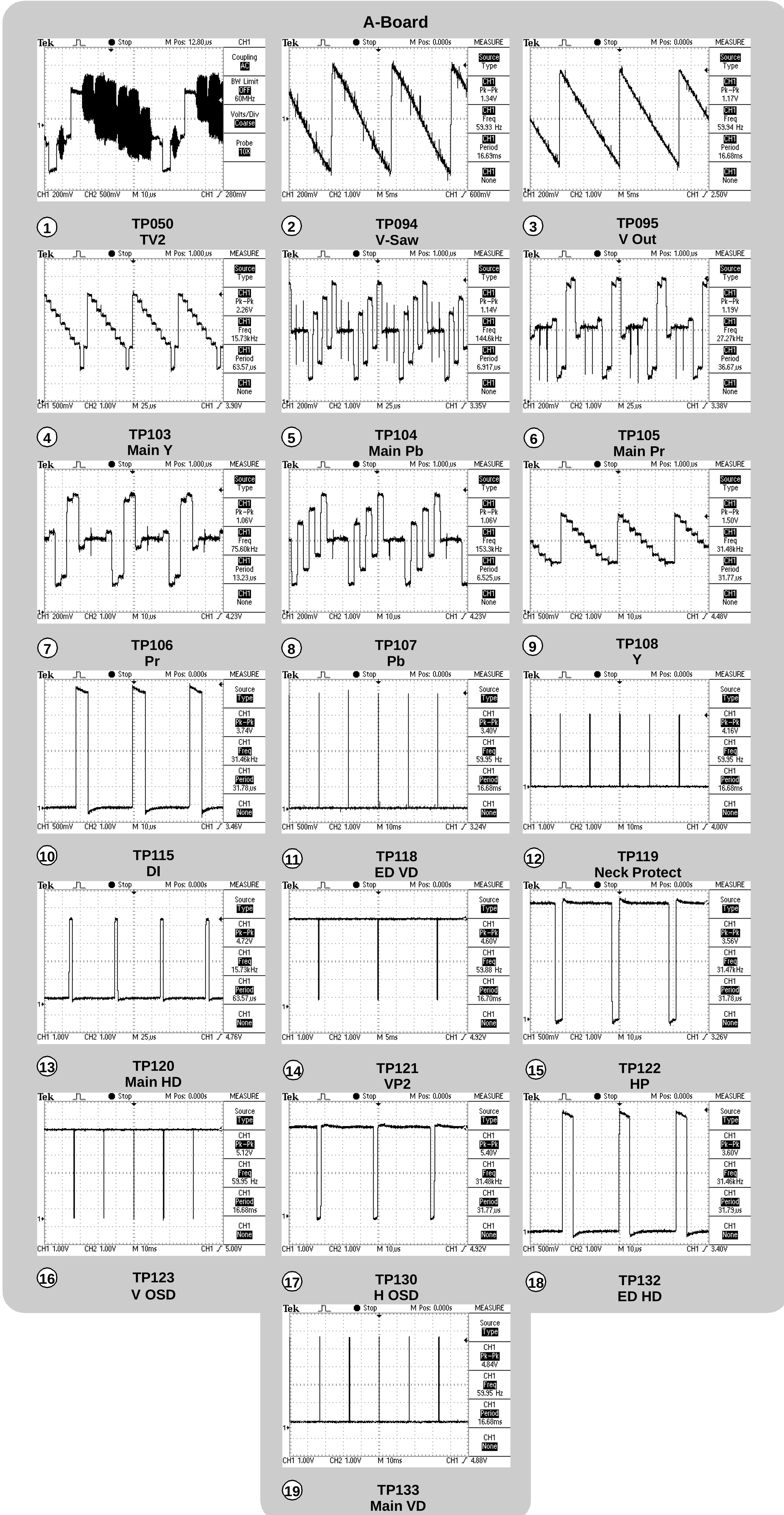
NOTA DE SEGURIDAD

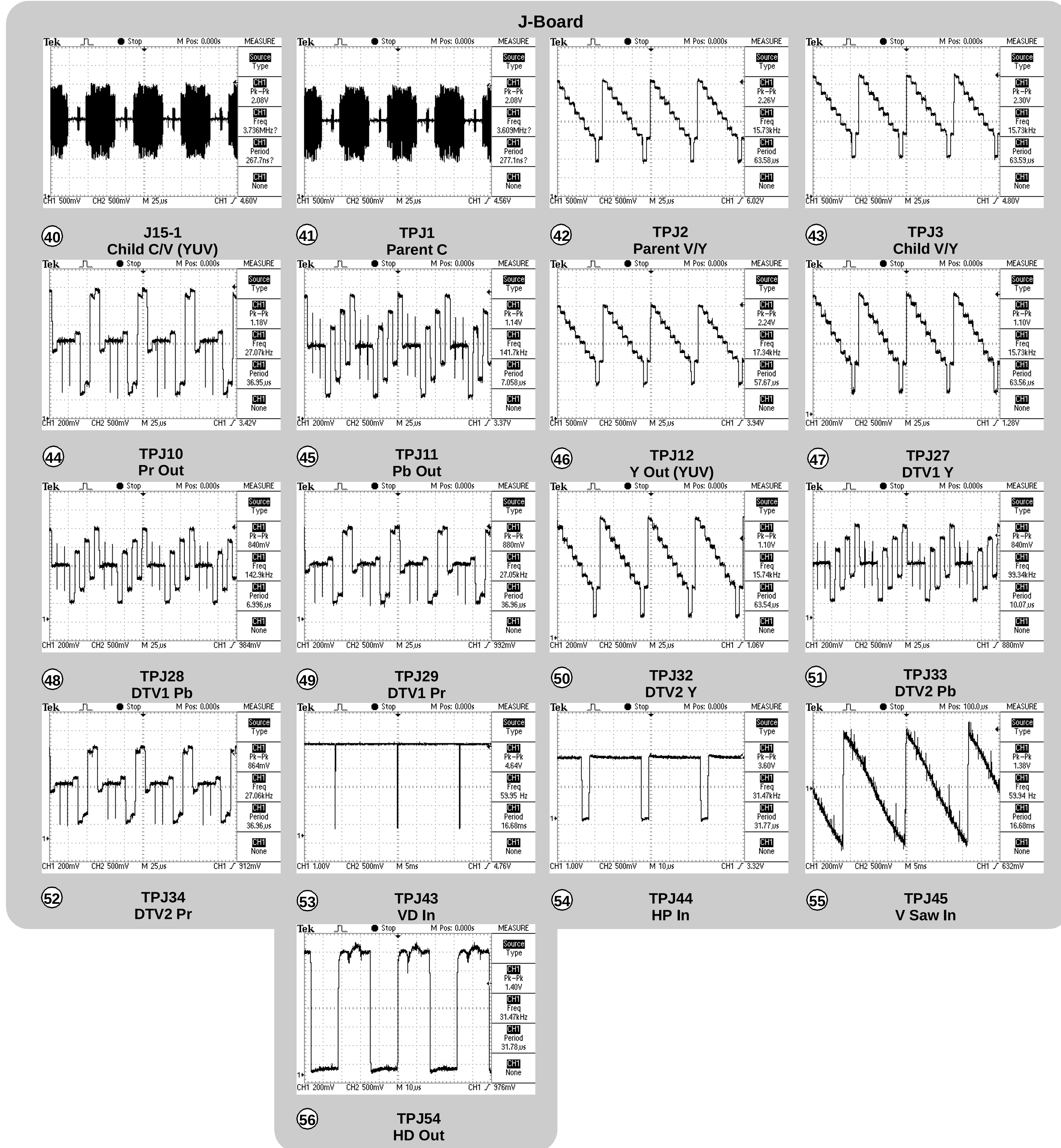
LOS DIAGRAMAS ELECTRICOS INCLUYEN CARACTERÍSTICAS ESPECIALES MUY IMPORTANTES PARA LA PROTECCIÓN CONTRA RAYOS-X, QUEMADURAS Y DESCARGAS ELÉCTRICAS. CUANDO SE DE SERVICIO ES IMPORTANTE USAR PARA REEMPLAZO DE COMPONENTES CRITICOS, SOLO PARTES ESPECIFICADAS POR EL FABRICANTES. LOS COMPONENTES CRITICOS ESTAN SEÑALADOS EN LOS DIAGRAMAS POR EL SIMBOLO ⚠.

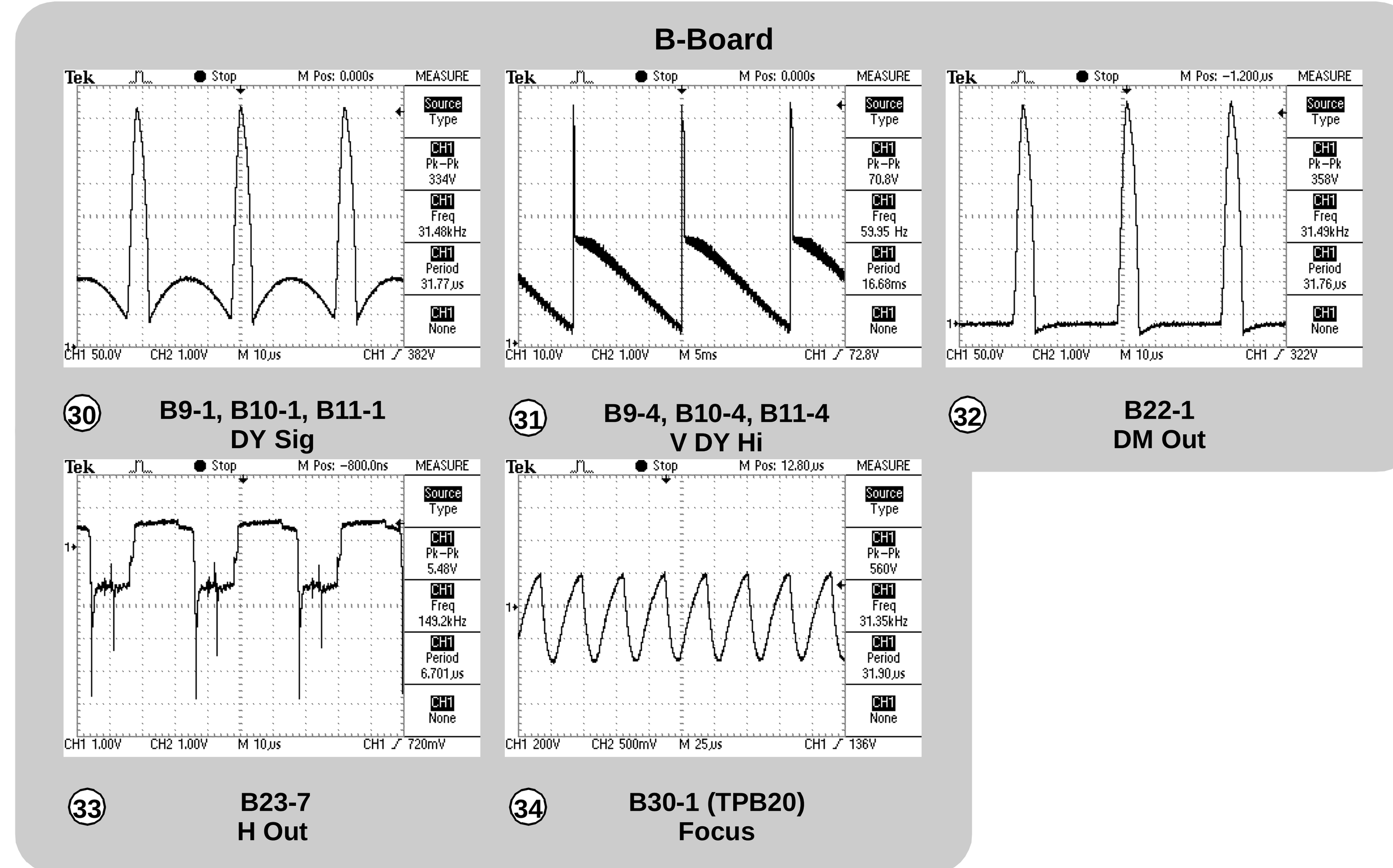
A | B | C | D | E | F | G | H

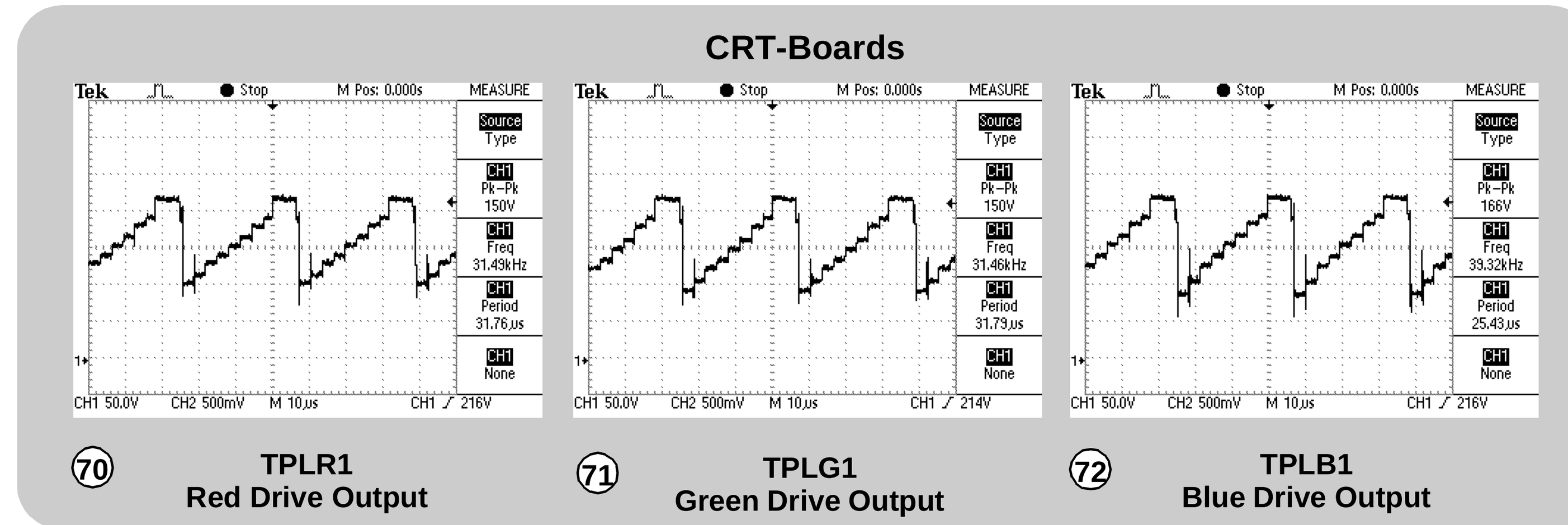
1 2 3 4 5

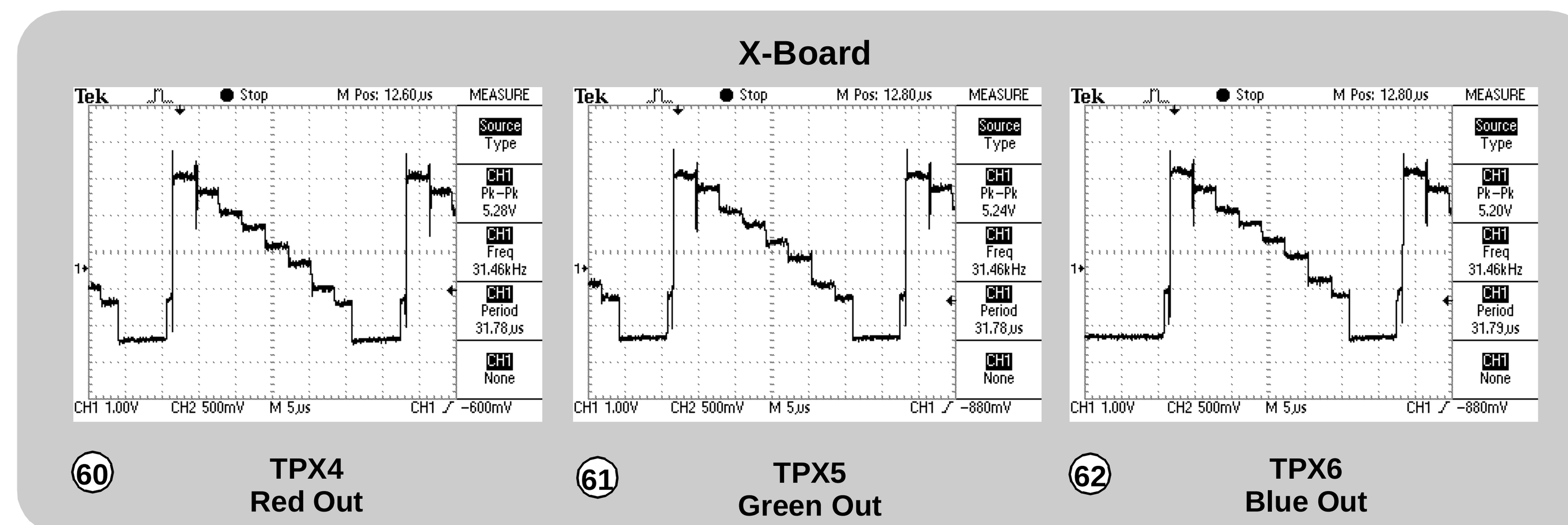
BOARD WAVEFORMS - FORMAS DE ONDA











Medición de Voltajes

1. Medición de voltaje:
   - El voltaje de entrada al Receptor es de 120V de Corriente Alterna. Un generador de patrones con formato NTSC se conecta a la entrada de la antena. (Patrón de Barras de Colores con 100 IREs para el Blanco y 7.5 IREs para el Negro.)
   - Los ajustes de los Menus Picture y Audio se normalizan.
     En el Menú Set-Up, en la opción ANTENA, se selecciona el modo de CABLE.
     El nivel de Volumen se minimiza.
     De los modos TV y Video, seleccionar el modo TV.
     Seleccionar modo Estereo del Audio.
   - Las mediciones de los voltajes son nominales y pueden variar hasta 10% en componentes en funcionamiento. Las lecturas de los voltajes pueden variar por la potencia de la señal y el contenido de la imagen.
   - Las fuentes de voltajes son nominales.
2. El símbolo ⏚ indica el tipo de tierra que se utiliza en la conexión del medidor.

PRECAUCION: Si no se utiliza la conexión a la tierra adecuada, se obtendrán mediciones equivocadas y podría dañar el equipo de medición.

Medición de Formas de Onda

1. Un símbolo como ③ indica el punto para medir una señal. (La medición puede hacerse en el punto con mayor accesibilidad, siempre que sea común al indicado.)
2. Se midieron utilizando un generador con formato NTSC conectado a la terminal de la antena. (Patrón de 8 Barras de Colores EAI, formato NTSC de 100 IREs para el Blanco y 7.5 IREs para el Negro.)
3. Los ajustes de usuario de los Menus PICTURE y AUDIO se normalizaron. Posteriormente el nivel de volumen se ajusta al mínimo.
4. Las formas de onda de Video y Color fueron tomadas con un osciloscopio de banda alta y con un punta de prueba de baja capacitancia (10 a 1). La forma y amplitud de las ondas puede variar según el tipo de osciloscopio que se utilice y sus características.
5. El símbolo de tierra ⏚ que aparece junto al número de la forma de onda, indica que se utiliza conexión a **Tierra Caliente** en el extremo negativo de la punta de prueba.

PRECAUCION: Si no se utiliza la conexión a la tierra adecuada, se obtendrán mediciones equivocadas y podría dañar el equipo de medición.

Notas de los Diagramas

1. Las Resistencias son de Carbón de 1/4W, a menos que se indique otra característica.
2. Los Capacitores son de Cerámica para 50V, a menos que se indique otra característica.
3. El valor indicado de las Bobinas es la inductancia expresada en µH.
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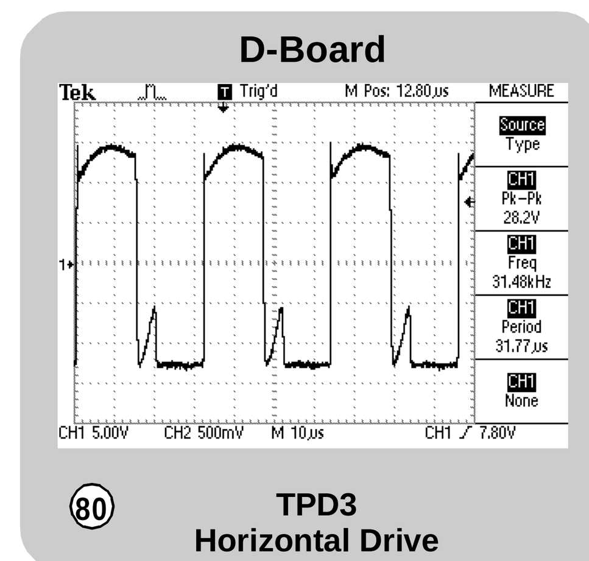
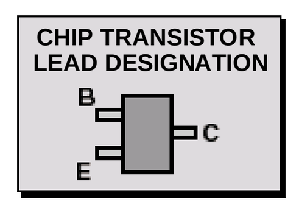
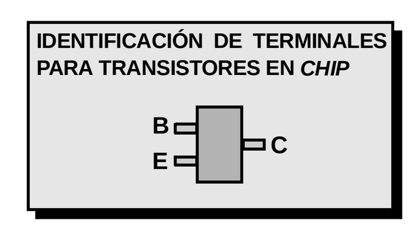
5. Los componentes señalados con el símbolo ⚠ son considerados componentes críticos y deben ser reemplazados sólo con las partes especificadas por el fabricante.
6. ▬▬ (**LINEA GRUESA**) indica las líneas de alimentación de los Voltajes B+.
7. Los diagramas eléctricos están sujetos a cambio sin previo aviso.
8. El símbolo ⏚ indica que es una conexión a **Tierra Caliente** y el símbolo ⏚ indica conexión a **Tierra Fría**.

NOTA: Los demas símbolos de componentes incluidos son usados con fines de diseño.







Schematic Notes

1. Resistors are carbon 1/4W unless noted otherwise.
2. Capacitors are ceramic 50V unless noted otherwise.
3. Coil value notes is inductance in µH.
4. Test point indicated by ⚲ ; Test point but no pin ⚲.
5. Components indicated with ⚠ are critical parts and replacement should be made with manufacture specified replacement parts only.
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7. The schematic diagrams are current at the time of printing and are subject to change without notice.
8. Ground symbol ⏚ indicates **HOT GROUND CONNECTION**; ⏚ indicates COLD GROUND.

NOTE: All other component symbols are used for engineering design purposes.

Waveform Measurements

1. ③ indicates waveform measurement. (Measurement can be taken at the best accessible location in common to the indicated point.)
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4. All video and color waveforms are taken with a wideband scope and a probe with low capacitance (10 to 1). Shape and peak altitudes may vary depending on the type of Oscilloscope used and its settings.
5. Ground symbol ⏚ shown on waveform number indicates (Hot) ground lead connection of the Oscilloscope.

CAUTION: Incorrect ground connection of the test equipment will result in erroneous readings.

The waveforms are taken in the order of circuit flow through the various sections.

Voltage Measurements

1. Voltage measurement:
   - AC input to the PTV is 120V. NTSC or HD (1125i & 525P) signal generator is connected to the antenna of the PTV. (Color bar pattern of 100 IRE white and 7.5 IRE black.)
   - All Picture and Audio adjustments are set to Normalize.
     TV ANT/CABLE - (Set-Up Menu) in TV/ANT Mode
     Volume - Min
     TV/Video SW - TV position
     Audio Mode - Stereo
   - Voltage readings are nominal and may vary ±10% on active devices. Some voltage reading will vary with signal strength and picture content.
   - Supply voltages are nominal.
2. Ground symbol ⏚ indicates ground lead connection of meter. Incorrect ground connection will result in erroneous readings.

CAUTION: ***Incorrect ground connection of the test equipment will result in erroneous readings.***

NOTA DE SEGURIDAD

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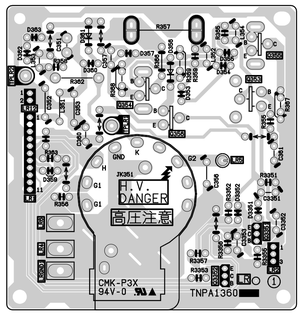
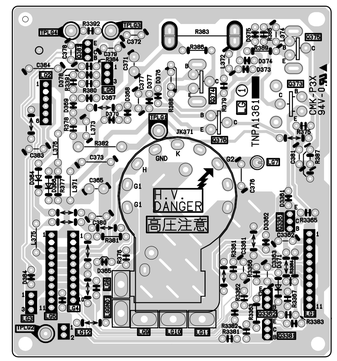
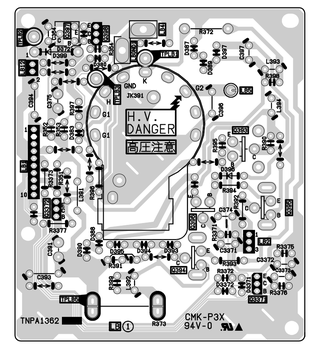
LR-Board Layout - TNPA1360
Diagrama del Circuito Impreso (LR) - TNPA1360



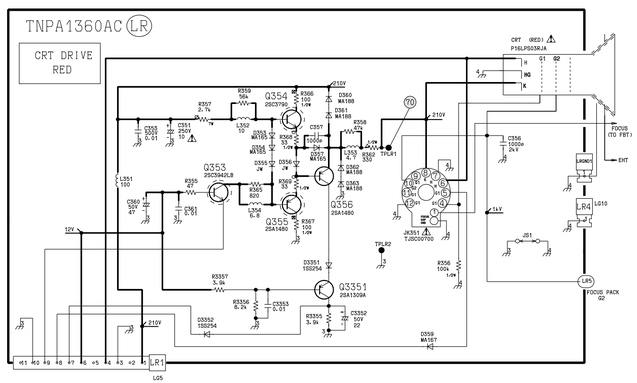
LG-Board Layout - TNPA1361
Diagrama del Circuito Impreso (LG) - TNPA1361



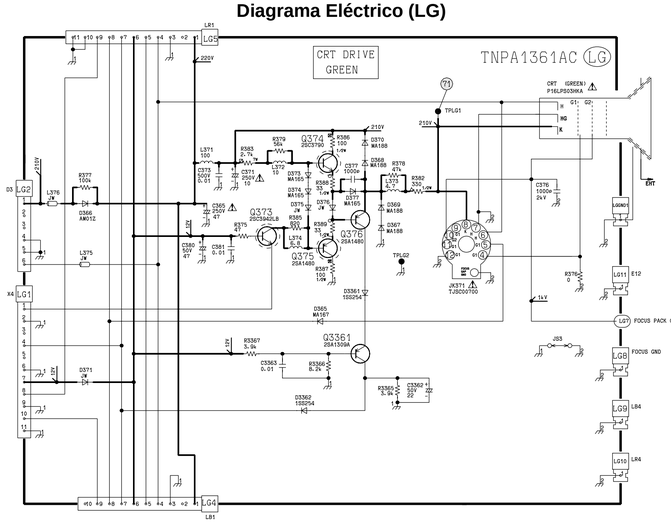
LB-Board Layout - TNPA1362
Diagrama del Circuito Impreso (LB) - TNPA1362



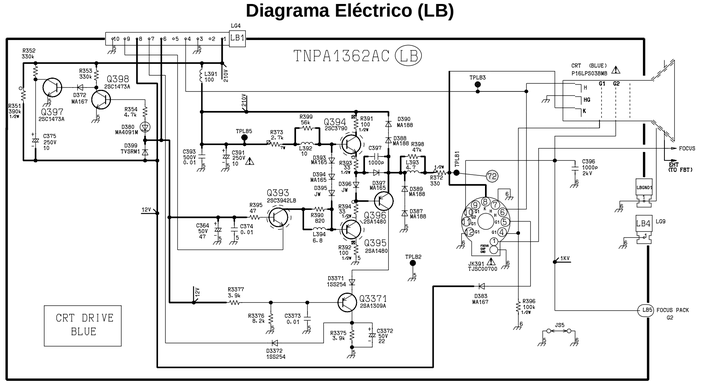
LR-Board Schematic
Diagrama Eléctrico (LR)



LG-Board Schematic
Diagrama Eléctrico (LG)



LB-Board Schematic
Diagrama Eléctrico (LB)



Notes:

The board layouts were modified to enhance and display traces otherwise hidden by a mask.

Voltages and waveforms are on Sheet 3 Side A and Sheet 5 Side B, respectively.

Notas:

Los diagramas de circuito impreso fueron modificados para mayor claridad.

Los voltajes y formas de onda se localizan en el lado A de la página 3 y en el lado B de la página 5 respectivamente.

Boards Designation

- A-Board - Main Signal
- B-Board - Power Supply
- D-Board - Diode Mod. H. Drive
- DC-Board - Digital Convergence
- DP-Board - Digital Processing
- G-Board - Front AV Connections
- H-Board - AV Terminal (YUV)
- J-Board - AV Switch, Audio AMP etc.
- K-Board - Customer Controls
- LB/LG/LR-Boards - Blue, Green & Red CRT Boards
- N-Board - VIF, MTS
- R-Board - Remote Control Sensor
- SB/SG/SR-Boards - VM for Blue, Green & Red
- T-Board - Sub Power
- X-Board - RGB Signal Sync Out
- YC-Board - 3D Y/C

Indice de Tarjetas

- Tarjeta A - Chasis Principal
- Tarjeta B - Fuente de Alimentación
- Tarjeta D - Impulsor Horiz. de la Modulación del Diodo
- Tarjeta DC - Convergencia Digital
- Tarjeta DP - Procesamiento Digital
- Tarjeta G - Entradas frontales de AV
- Tarjeta H - Terminales AV (YUV)
- Tarjeta J - Interruptor AV, Audio AMP etc.
- Tarjeta K - Ajustes de Usuario
- Tarjetas LB/LG/LR - Tarjetas Roja, Azul y Verde para los TRC
- Tarjeta N - VIF, MTS
- Tarjeta R - Sensor del Control Remoto
- Tarjetas SB/SG/SR - VM para el Rojo, Azul y Verde
- Tarjeta T - Poder Alterno
- Tarjeta X - Señal de Sync RGB
- Tarjeta YC - 3D Y/C

Schematic Notes

1. Resistors are carbon 1/4W unless noted otherwise.
2. Capacitors are ceramic 50V unless noted otherwise.
3. Coil value notes is inductance in µH.
4. Test point indicated by ▼, Test point but no pin ▽.
5. Components indicated with ⚠ are critical parts and replacement should be made with manufacture specified replacement parts only.
6. ▬▬ (**BOLD LINE**) indicates the route of B+ supply.
7. The schematic diagrams are current at the time of printing and are subject to change without notice.
8. Ground symbol ⏚ indicates **HOT GROUND CONNECTION**; ⏚ indicates COLD GROUND.

NOTE: All other component symbols are used for engineering design purposes.

Notas de los Diagramas

1. Las Resistencias son de Carbón de 1/ 4W, a menos que se indique otra característica.
2. Los Capacitores son de Cerámica para 50V, a menos que se indique otra característica.
3. El valor indicado de las Bobinas es la inductancia expresada en µH.
4. Los puntos de prueba en la terminal de algún componente son indicados por ▼. Los puntos de prueba fuera de los componentes se indican con ▽.
5. Los componentes señalados con el símbolo ⚠ son considerados componentes críticos y deben ser reemplazados sólo con las partes especificadas por el fabricante.
6. ▬▬ (**LINEA GRUESA**) indica las líneas de alimentación de los Voltajes B+.
7. Los diagramas eléctricos están sujetos a cambio sin previo aviso.
8. El símbolo ⏚ indica que es una conexión a **Tierra Caliente** y el símbolo ⏚ indica conexión a **Tierra Fría.**

NOTA: Los demas símbolos de componentes incluidos son usados con fines de diseño.

Waveform Measurements

1. ③ indicates waveform measurement. (Measurement can be taken at the best accessible location in common to the indicated point.)
2. Taken with an NTSC signal generator connected to the antenna terminal. (NTSC color bar pattern of 8 bars of EIA colors, 100 IRE white and 7.5 IRE black.)
3. Customer Controls (Picture/Audio Menu) are set to Normalize. Volume is set to "MIN".
4. All video and color waveforms are taken with a wideband scope and a probe with low capacitance (10 to 1). Shape and peak altitudes may vary depending on the type of Oscilloscope used and its settings.
5. Ground symbol ⏚ shown on waveform number indicates (Hot) ground lead connection of the Oscilloscope.

CAUTION: Incorrect ground connection of the test equipment will result in erroneous readings.

The waveforms are taken in the order of circuit flow through the various sections.

Medición de Formas de Onda

1. Un símbolo como ③ indica el punto para medir una señal. (La medición puede hacerse en el punto con mayor accesibilidad, siempre que sea común al indicado.)
2. Se midieron utilizando un generador con formato NTSC conectado a la terminal de la antena. (Patrón de 8 Barras de Colores EAI, formato NTSC de 100 IREs para el Blanco y 7.5 IREs para el Negro.)
3. Los ajustes de usuario de los Menus PICTURE y AUDIO se normalizaron. Posteriormente el nivel de volumen se ajusta al mínimo.
4. Las formas de onda de Video y Color fueron tomadas con un osciloscopio de banda alta y con un punta de prueba de baja capacitancia (10 a 1). La forma y amplitud de las ondas puede variar según el tipo de osciloscopio que se utilice y sus características.
5. El símbolo de tierra ⏚ que aparece junto al número de la forma de onda, indica que se utiliza conexión a **Tierra Caliente** en el extremo negativo de la punta de prueba.

PRECAUCION: Si no se utiliza la conexión a la tierra adecuada, se obtendrán mediciones equivocadas y podría dañar el equipo de medición.

Voltage Measurements

1. Voltage measurement:
   - AC input to the PTV is 120V. NTSC or HD (1125i & 525P) signal generator is connected to the antenna of the PTV. (Color bar pattern of 100 IRE white and 7.5 IRE black.)
   - All Picture and Audio adjustments are set to Normalize.
     TV ANT/CABLE - (Set-Up Menu) in TV/ANT Mode
     Volume - Min
     TV/Video SW - TV position
     Audio Mode - Stereo
   - Voltage readings are nominal and may vary ±10% on active devices. Some voltage reading will vary with signal strength and picture content.
   - Supply voltages are nominal.
2. Ground symbol ⏚ indicates ground lead connection of meter. Incorrect ground connection will result in erroneous readings.

*CAUTION: **Incorrect ground connection of the test equipment will result in erroneous readings.***

Medición de Voltajes

1. Medición de voltaje:
   - El voltaje de entrada al Receptor es de 120V de Corriente Alterna. Un generador de patrones con formato NTSC se conecta a la entrada de la antena. (Patrón de Barras de Colores con 100 IREs para el Blanco y 7.5 IREs para el Negro.)
   - Los ajustes de los Menus Picture y Audio se normalizan.
     En el Menú Set-Up, en la opción ANTENA, se selecciona el modo de CABLE.
     El nivel de Volumen se minimiza.
     De los modos TV y Video, seleccionar el modo TV.
     Seleccionar modo Estereo del Audio.
   - Las mediciones de los voltajes son nominales y pueden variar hasta 10% en componentes en funcionamiento. Las lecturas de los voltajes pueden variar por la potencia de la señal y el contenido de la imagen.
   - Las fuentes de voltajes son nominales.
2. El símbolo ⏚ indica el tipo de tierra que se utiliza en la conexión del medidor.

PRECAUCION: Si no se utiliza la conexión a la tierra adecuada, se obtendrán mediciones equivocadas y podría dañar el equipo de medición.

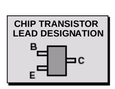
IMPORTANT SAFETY NOTICE

THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES THAT ARE IMPORTANT FOR PROTECTION FROM X-RADIATION, FIRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING IT IS ESSENTIAL THAT ONLY MANUFACTURERS SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS DESIGNATED WITH A ⚠ IN THE SCHEMATIC.

NOTA DE SEGURIDAD

LOS DIAGRAMAS ELÉCTRICOS INCLUYEN CARACTERÍSTICAS ESPECIALES MUY IMPORTANTES PARA LA PROTECCIÓN CONTRA RAYOS-X, QUEMADURAS Y DESCARGAS ELÉCTRICAS. CUANDO SE DE SERVICIO ES IMPORTANTE USAR PARA REEMPLAZO DE COMPONENTES CRITICOS, SOLO PARTES ESPECIFICADAS POR EL FABRICANTES. LOS COMPONENTES CRITICOS ESTAN SEÑALADOS EN LOS DIAGRAMAS POR EL SIMBOLO ⚠.

CHIP TRANSISTOR LEAD DESIGNATION



IDENTIFICACIÓN DE TERMINALES PARA TRANSISTORES EN *CHIP*

Diagramas Eléctricos y de Circuito Impreso Tarjetas LR, LG & LB
MTC9908031C1 & MTC9908032C1

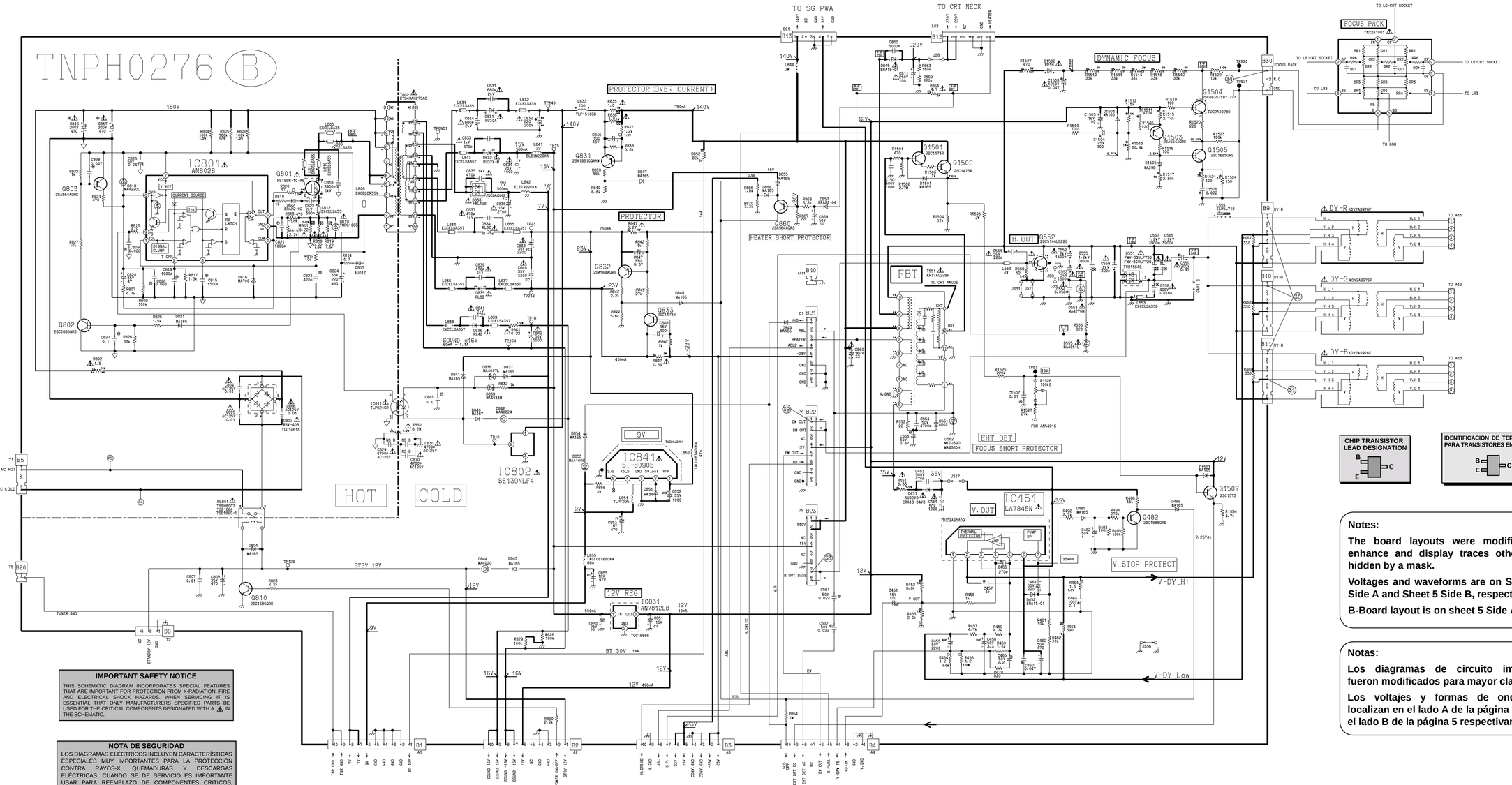
Sheet 6 of 10
Side A

Página 6 de 10
Lado A

LR, LG & LB-Board
Schematics & Layouts

PT-51DX80A/CA & PT-61DX80A/CA/VA

B-Board Schematic
Diagrama Eléctrico (B)



IMPORTANT SAFETY NOTICE

THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES THAT ARE IMPORTANT FOR PROTECTION FROM X-RADIATION, FIRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING IT IS ESSENTIAL THAT ONLY MANUFACTURERS SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS DESIGNATED WITH A ⚠ IN THE SCHEMATIC.

NOTA DE SEGURIDAD

LOS DIAGRAMAS ELÉCTRICOS INCLUYEN CARACTERÍSTICAS ESPECIALES MUY IMPORTANTES PARA LA PROTECCIÓN CONTRA RAYOS-X, QUEMADURAS Y DESCARGAS ELÉCTRICAS CUANDO SE DE SERVICIO ES IMPORTANTE USAR PARA REEMPLAZO DE COMPONENTES CRITICOS, SOLO PARTES ESPECIFICADAS POR EL FABRICANTES. LOS COMPONENTES CRITICOS ESTAN SEÑALADOS EN LOS DIAGRAMAS POR EL SIMBOLO ⚠.

CHIP TRANSISTOR LEAD DESIGNATION

IDENTIFICACIÓN DE TERMINALES PARA TRANSISTORES EN *CHIP*

Notes:

The board layouts were modified to enhance and display traces otherwise hidden by a mask.

Voltages and waveforms are on Sheet 3 Side A and Sheet 5 Side B, respectively.

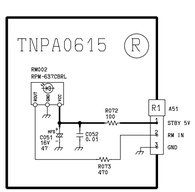
B-Board layout is on sheet 5 Side A.

Notas:

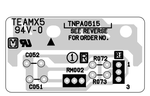
Los diagramas de circuito impreso fueron modificados para mayor claridad.

Los voltajes y formas de onda se localizan en el lado A de la página 3 y en el lado B de la página 5 respectivamente.

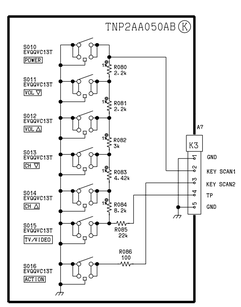
R-Board Schematic
Diagrama Eléctrico (R)



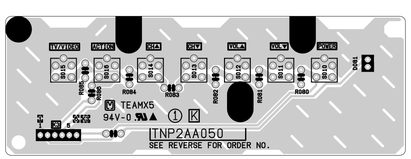
R-Board Layout- TNPA0615
Diagrama del Circuito Impreso (R) TNPA0615



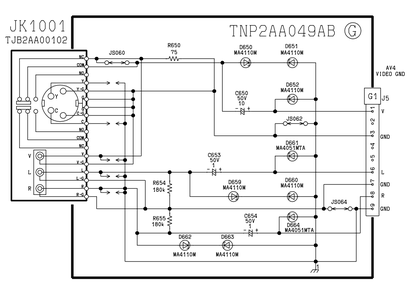
K-Board Schematic
Diagrama Eléctrico (K)



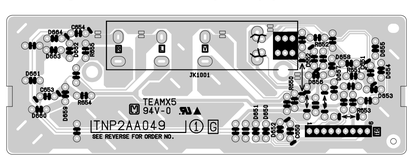
K-Board Layout - TNP2AA050
Diagrama del Circuito Impreso (K) - TNP2AA050



G-Board Schematic
Diagrama Eléctrico (G)



G-Board Layout - TNP2AA049
Diagrama del Circuito Impreso (G) - TNP2AA049



MTC990803101C1 & MTC990803202C1

Diagramas Eléctricos y de Circuito Impreso Tarjetas B, G, K & R

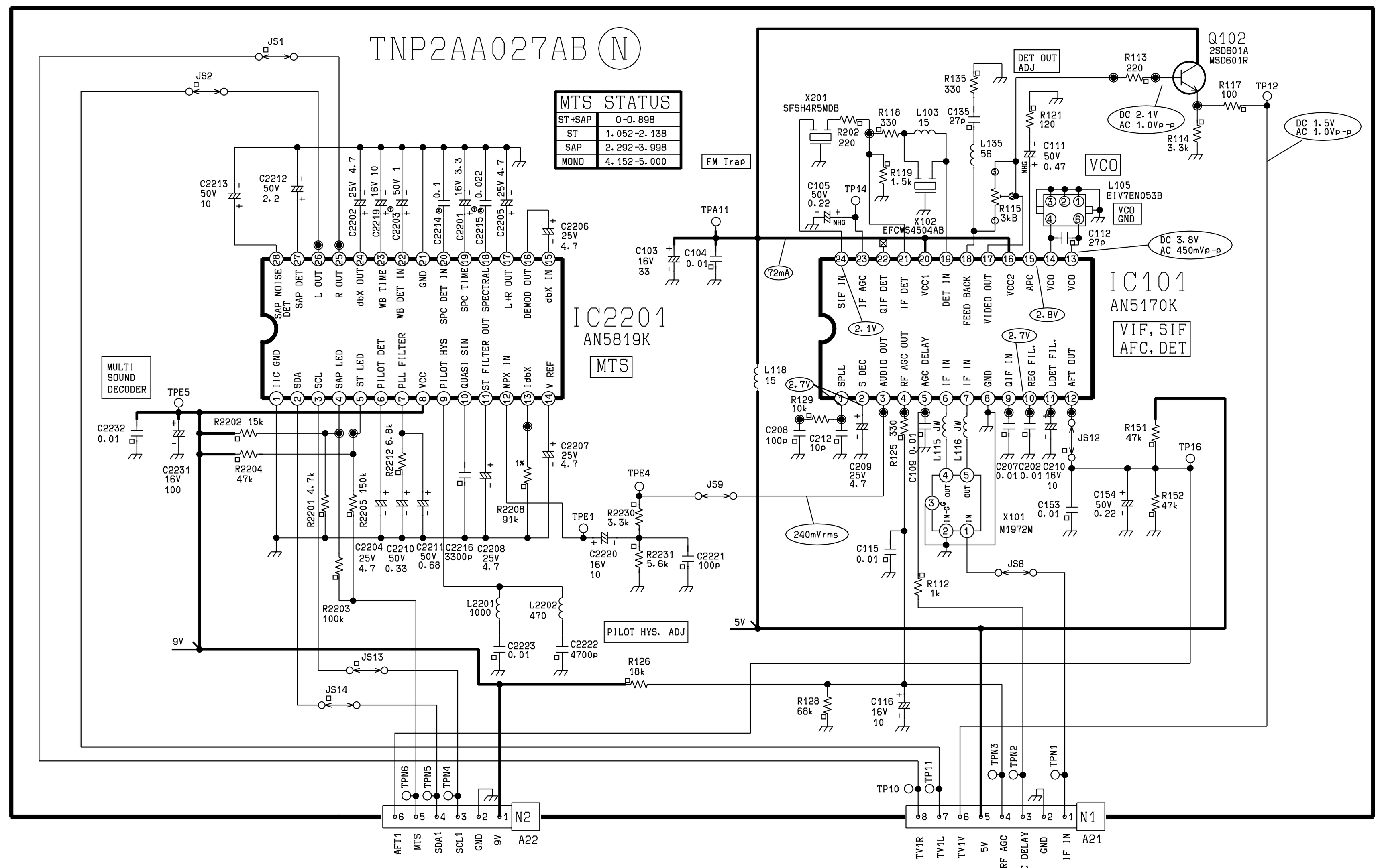
Sheet 6 of 10 Side B

Página 6 de 10 Lado B

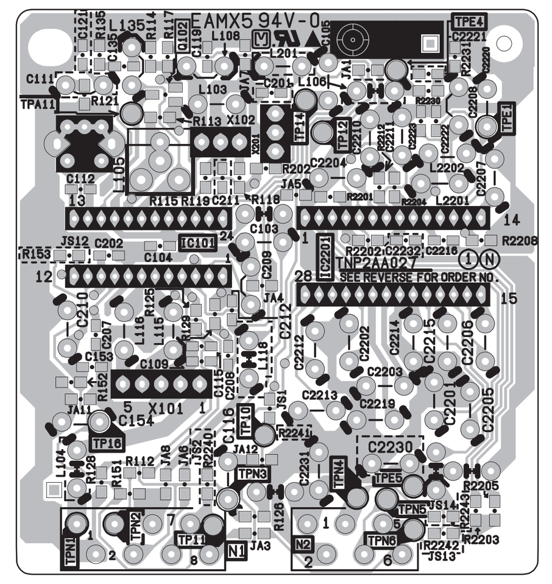
B, G, K & R - Board Schematics & Layouts

PT-51DX80A/CA & PT-61DX80A/CA/VA

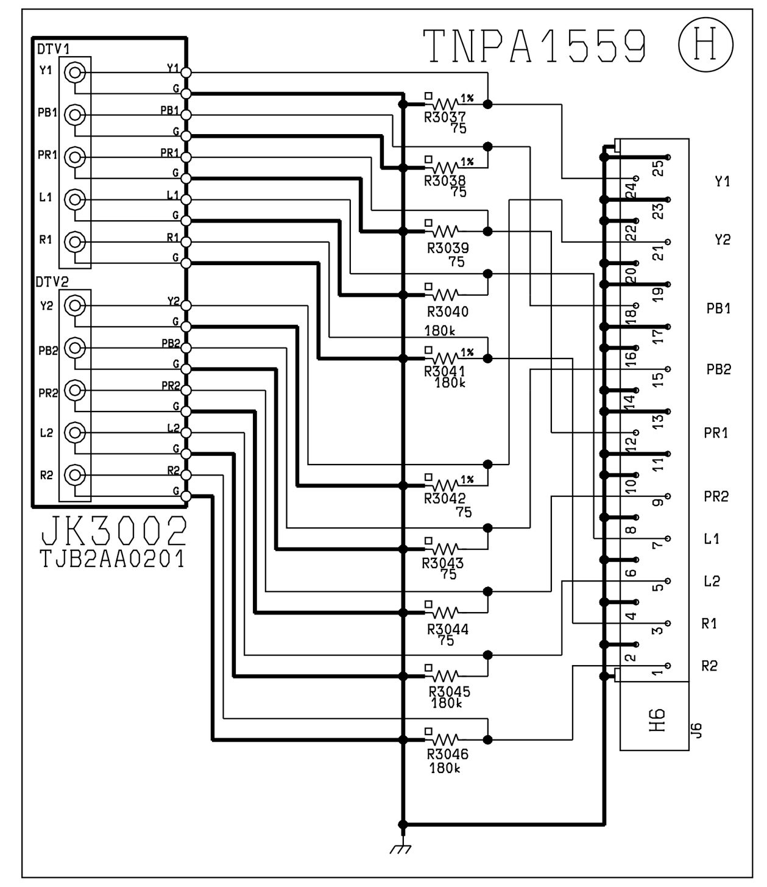
N-Board Schematic
Diagrama Eléctrico (N)



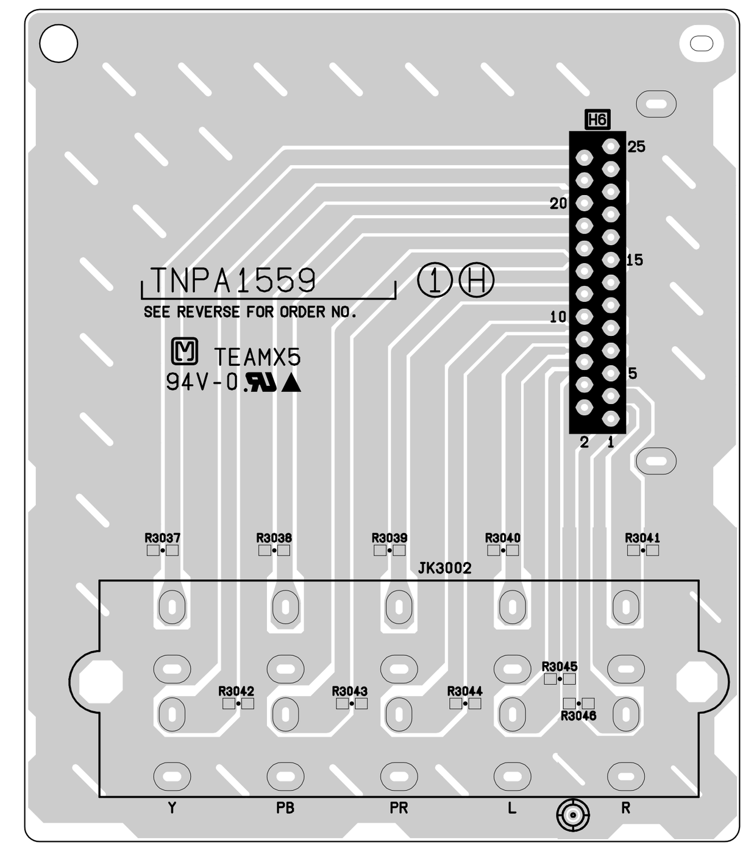
N-Board Layout - TNP2AA027
Diagrama del Circuito Impreso (N)
TNP2AA027



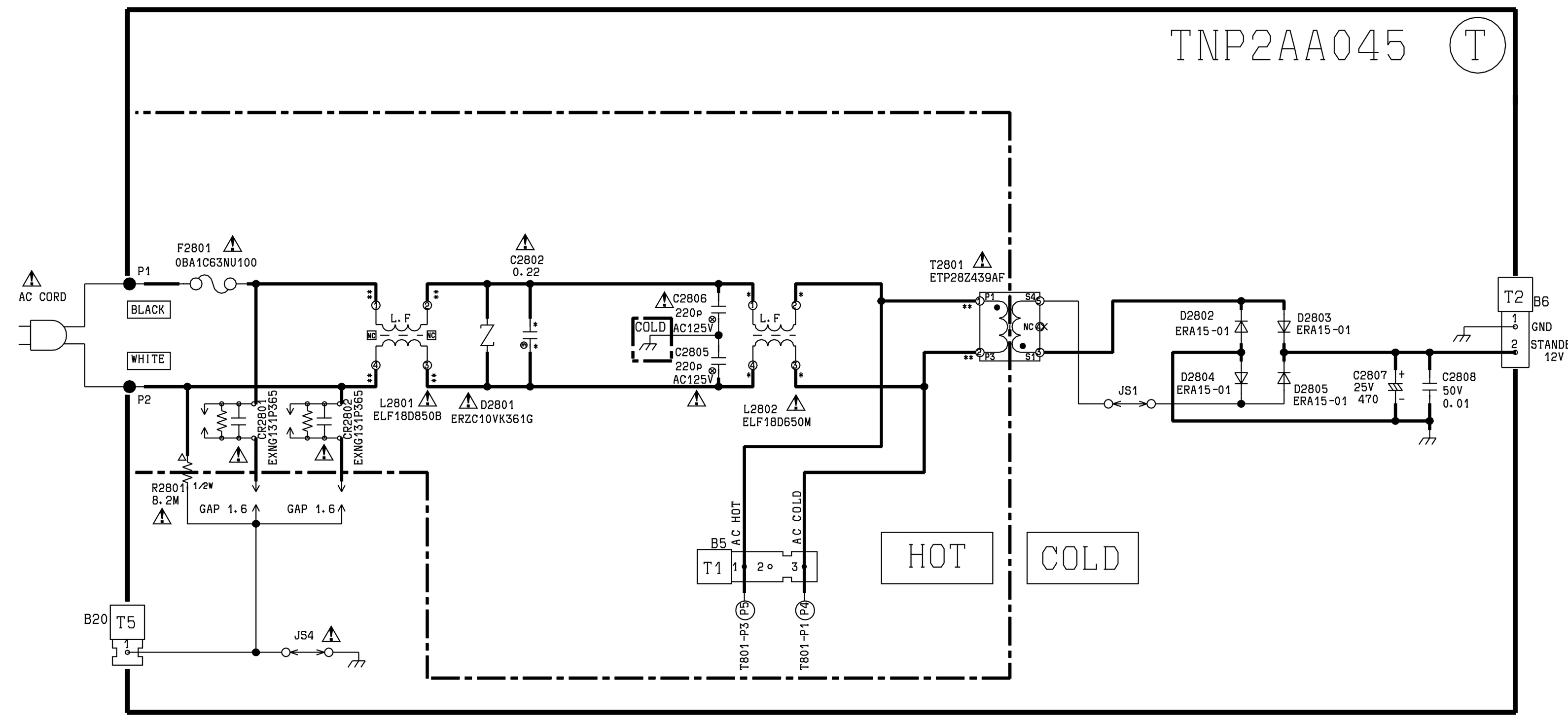
H-Board Schematic
Diagrama Eléctrico (H)



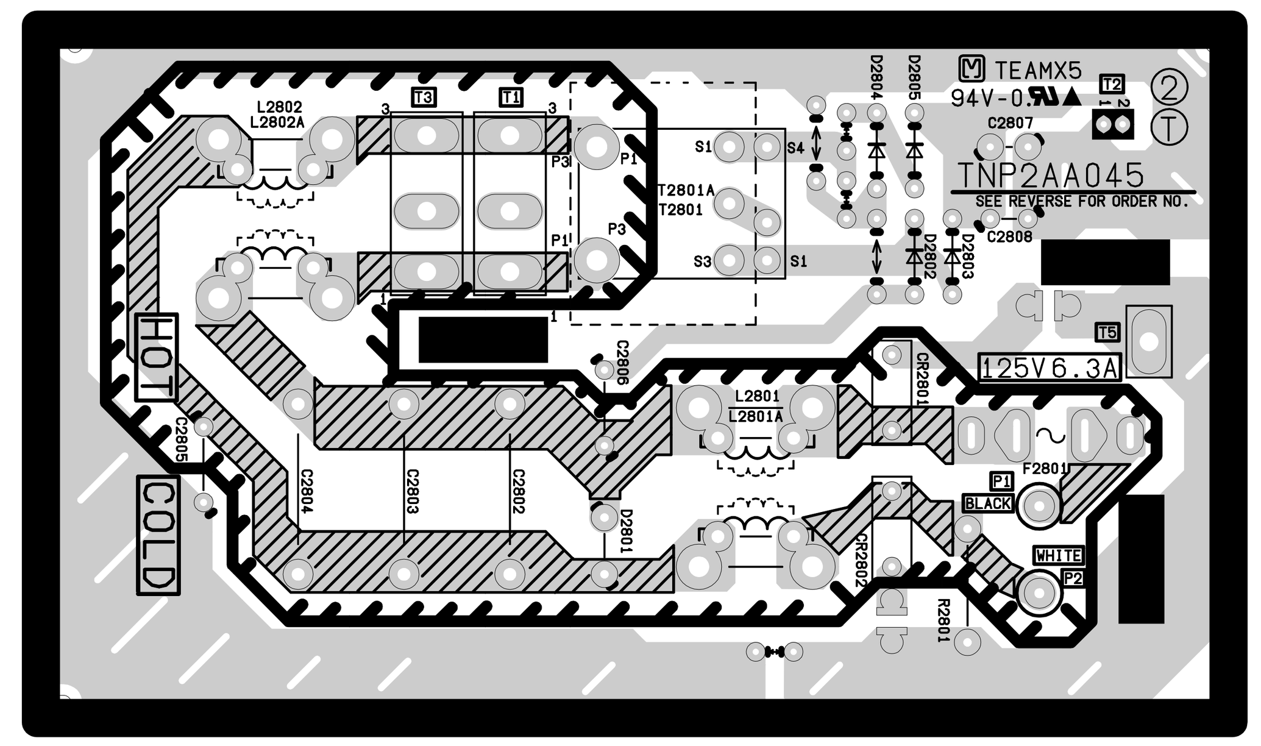
H-Board Layout - TNPA1559
Diagrama del Circuito Impreso (H)
TNPA1559



T-Board Schematic
Diagrama Eléctrico (T)



T-Board Layout - TNP2AA045
Diagrama del Circuito Impreso (T) - TNP2AA045



Notes:

The board layouts were modified to enhance and display traces otherwise hidden by a mask.

Voltages and waveforms are on Sheet 3 Side A and Sheet 5 Side B, respectively.

Notas:

Los diagramas de circuito impreso fueron modificados para mayor claridad.

Los voltajes y formas de onda se localizan en el lado A de la página 3 y en el lado B de la página 5 respectivamente.

Boards Designation

- A-Board - Main Signal
- B-Board - Power Supply
- D-Board - Diode Mod. H. Drive
- DC-Board - Digital Convergence
- DP-Board - Digital Processing
- G-Board - Front AV Connections
- H-Board - AV Terminal (YUV)
- J-Board - AV Switch, Audio AMP etc.
- K-Board - Customer Controls
- LB/LG/LR-Boards - Blue, Green & Red CRT Boards
- N-Board - VIF, MTS
- R-Board - Remote Control Sensor
- SB/SG/SR-Boards - VM for Blue, Green & Red
- T-Board - Sub Power
- X-Board - RGB Signal Sync Out
- YC-Board - 3D Y/C

Indice de Tarjetas

- Tarjeta A - Chasis Principal
- Tarjeta B - Fuente de Alimentación
- Tarjeta D - Impulsor Horiz. de la Modulación del Diodo
- Tarjeta DC - Convergencia Digital
- Tarjeta DP - Procesamiento Digital
- Tarjeta G - Entradas frontales de AV
- Tarjeta H - Terminales AV (YUV)
- Tarjeta J - Interruptor AV, Audio AMP etc.
- Tarjeta K - Ajustes de Usuario
- Tarjetas LB/LG/LR - Tarjetas Roja, Azul y Verde para los TRC
- Tarjeta N - VIF, MTS
- Tarjeta R - Sensor del Control Remoto
- Tarjetas SB/SG/SR - VM para el Rojo, Azul y Verde
- Tarjeta T - Poder Alterno
- Tarjeta X - Señal de Sync RGB
- Tarjeta YC - 3D Y/C

Schematic Notes

1. Resistors are carbon 1/4W unless noted otherwise.
2. Capacitors are ceramic 50V unless noted otherwise.
3. Coil value notes is inductance in µH.
4. Test point indicated by ; Test point but no pin .
5. Components indicated with ⚠ are critical parts and replacement should be made with manufacture specified replacement parts only.
6. (**BOLD LINE**) indicates the route of B+ supply.
7. The schematic diagrams are current at the time of printing and are subject to change without notice.
8. Ground symbol indicates **HOT GROUND CONNECTION**; indicates COLD GROUND.

NOTE: All other component symbols are used for engineering design purposes.

Notas de los Diagramas

1. Las Resistencias son de Carbón de 1/4W, a menos que se indique otra característica.
2. Los Capacitores son de Cerámica para 50V, a menos que se indique otra característica.
3. El valor indicado de las Bobinas es la inductancia expresada en µH.
4. Los puntos de prueba en la terminal de algún componente son indicados por . Los puntos de prueba fuera de los componentes se indican con .
5. Los componentes señalados con el símbolo ⚠ son considerados componentes críticos y deben ser reemplazados sólo con las partes especificadas por el fabricante.
6. (**LINEA GRUESA**) indica las líneas de alimentación de los Voltajes B+.
7. Los diagramas eléctricos están sujetos a cambio sin previo aviso.
8. El símbolo indica que es una conexión a **Tierra Caliente** y el símbolo indica conexión a **Tierra Fría**.

NOTA: Los demas símbolos de componentes incluidos son usados con fines de diseño.

Waveform Measurements

1. ③ indicates waveform measurement. (Measurement can be taken at the best accessible location in common to the indicated point.)
2. Taken with an NTSC signal generator connected to the antenna terminal. (NTSC color bar pattern of 8 bars of EIA colors, 100 IRE white and 7.5 IRE black.)
3. Customer Controls (Picture/Audio Menu) are set to Normalize. Volume is set to "MIN".
4. All video and color waveforms are taken with a wideband scope and a probe with low capacitance (10 to 1). Shape and peak altitudes may vary depending on the type of Oscilloscope used and its settings.
5. Ground symbol shown on waveform number indicates (Hot) ground lead connection of the Oscilloscope.

CAUTION: Incorrect ground connection of the test equipment will result in erroneous readings.

The waveforms are taken in the order of circuit flow through the various sections.

Medición de Formas de Onda

1. Un símbolo como ③ indica el punto para medir una señal. (La medición puede hacerse en el punto con mayor accesibilidad, siempre que sea común al indicado.)
2. Se midieron utilizando un generador con formato NTSC conectado a la terminal de la antena. (Patrón de 8 Barras de Colores EAI, formato NTSC de 100 IREs para el Blanco y 7.5 IREs para el Negro.)
3. Los ajustes de usuario de los Menus PICTURE y AUDIO se normalizaron. Posteriormente el nivel de volumen se ajusta al mínimo.
4. Las formas de onda de Video y Color fueron tomadas con un osciloscopio de banda alta y con un punta de prueba de baja capacitancia (10 a 1). La forma y amplitud de las ondas puede variar según el tipo de osciloscopio que se utilice y sus características.
5. El símbolo de tierra que aparece junto al número de la forma de onda, indica que se utiliza conexión a **Tierra Caliente** en el extremo negativo de la punta de prueba.

PRECAUCION: Si no se utiliza la conexión a la tierra adecuada, se obtendrán mediciones equivocadas y podría dañar el equipo de medición.

Voltage Measurements

1. Voltage measurement:
   - AC input to the PTV is 120V. NTSC or HD (1125i & 525P) signal generator is connected to the antenna of the PTV. (Color bar pattern of 100 IRE white and 7.5 IRE black.)
   - All Picture and Audio adjustments are set to Normalize.
     TV ANT/CABLE - (Set-Up Menu) in TV/ANT Mode
     Volume - Min
     TV/Video SW - TV position
     Audio Mode - Stereo
   - Voltage readings are nominal and may vary ±10% on active devices. Some voltage reading will vary with signal strength and picture content.
   - Supply voltages are nominal.
2. Ground symbol indicates ground lead connection of meter. Incorrect ground connection will result in erroneous readings.

CAUTION: ***Incorrect ground connection of the test equipment will result in erroneous readings.***

Medición de Voltajes

1. Medición de voltaje:
   - El voltaje de entrada al Receptor es de 120V de Corriente Alterna. Un generador de patrones con formato NTSC se conecta a la entrada de la antena. (Patrón de Barras de Colores con 100 IREs para el Blanco y 7.5 IREs para el Negro.)
   - Los ajustes de los Menus Picture y Audio se normalizan.
     En el Menú Set-Up, en la opción ANTENA, se selecciona el modo de CABLE.
     El nivel de Volumen se minimiza.
     De los modos TV y Video, seleccionar el modo TV.
     Seleccionar modo Estereo del Audio.
   - Las mediciones de los voltajes son nominales y pueden variar hasta 10% en componentes en funcionamiento. Las lecturas de los voltajes pueden variar por la potencia de la señal y el contenido de la imagen.
   - Las fuentes de voltajes son nominales.
2. El símbolo indica el tipo de tierra que se utiliza en la conexión del medidor.

PRECAUCION: Si no se utiliza la conexión a la tierra adecuada, se obtendrán mediciones equivocadas y podría dañar el equipo de medición.

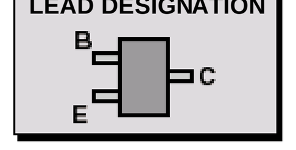
IMPORTANT SAFETY NOTICE

THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES THAT ARE IMPORTANT FOR PROTECTION FROM X-RADIATION, FIRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING IT IS ESSENTIAL THAT ONLY MANUFACTURERS SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS DESIGNATED WITH A ⚠ IN THE SCHEMATIC.

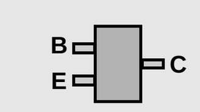
NOTA DE SEGURIDAD

LOS DIAGRAMAS ELÉCTRICOS INCLUYEN CARACTERÍSTICAS ESPECIALES MUY IMPORTANTES PARA LA PROTECCIÓN CONTRA RAYOS-X, QUEMADURAS Y DESCARGAS ELÉCTRICAS. CUANDO SE DE SERVICIO ES IMPORTANTE USAR PARA REEMPLAZO DE COMPONENTES CRITICOS, SOLO PARTES ESPECIFICADAS POR EL FABRICANTES. LOS COMPONENTES CRITICOS ESTAN SEÑALADOS EN LOS DIAGRAMAS POR EL SIMBOLO ⚠.

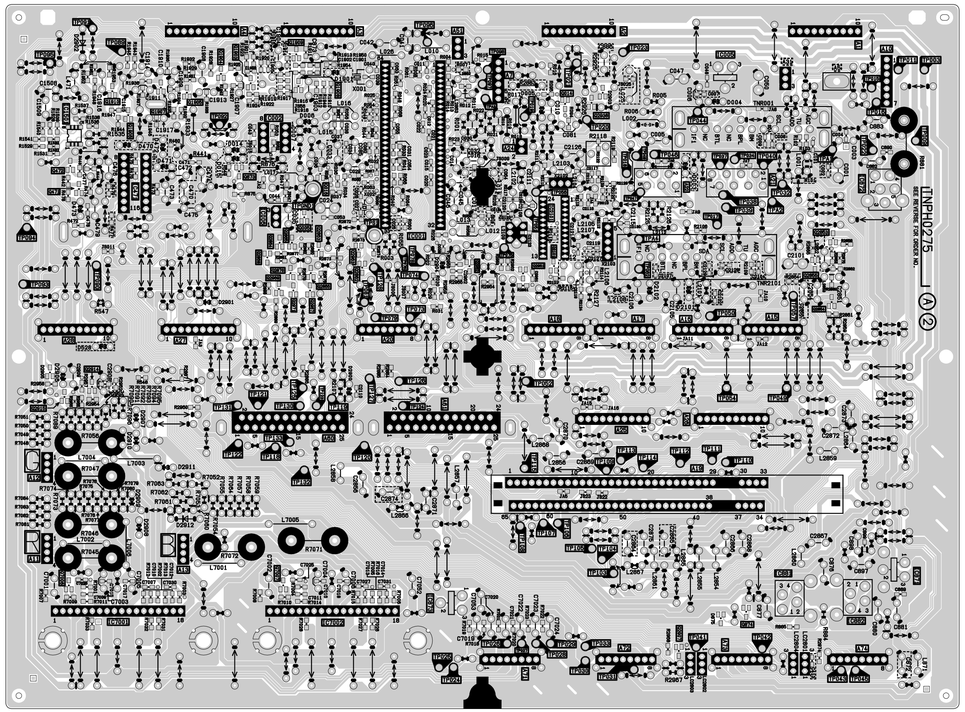
CHIP TRANSISTOR LEAD DESIGNATION



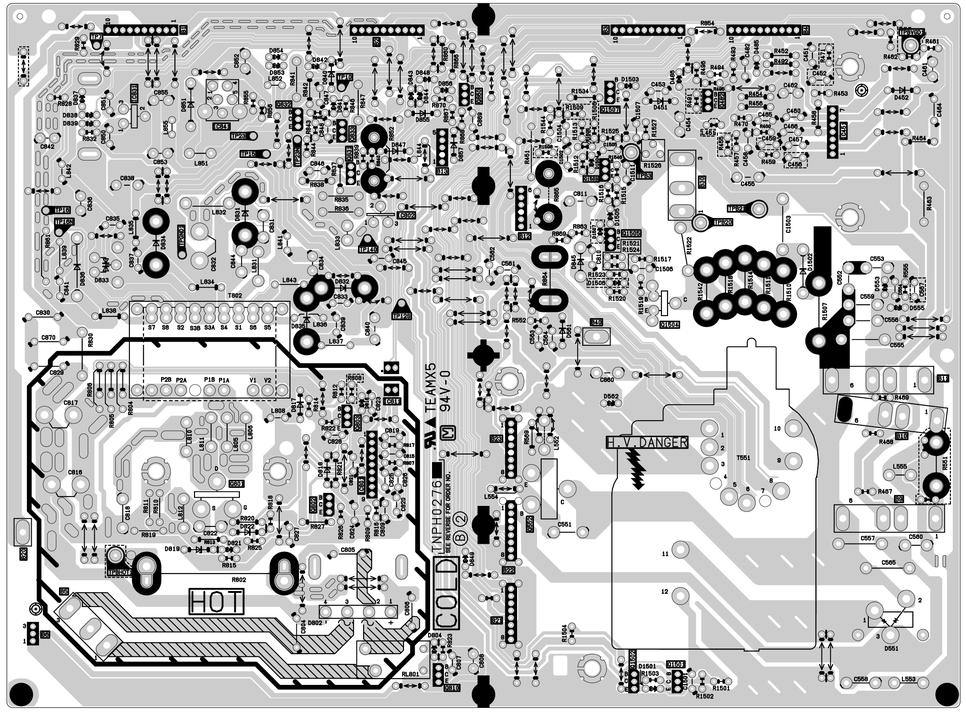
IDENTIFICACIÓN DE TERMINALES PARA TRANSISTORES EN *CHIP*



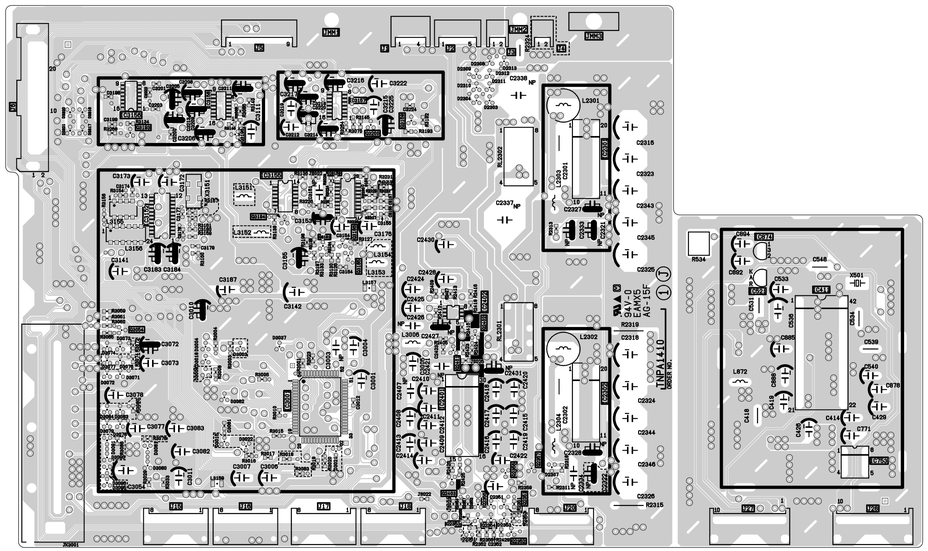
A-Board Layout - TNPH0275
Diagrama del Circuito Impreso (A) - TNPH0275

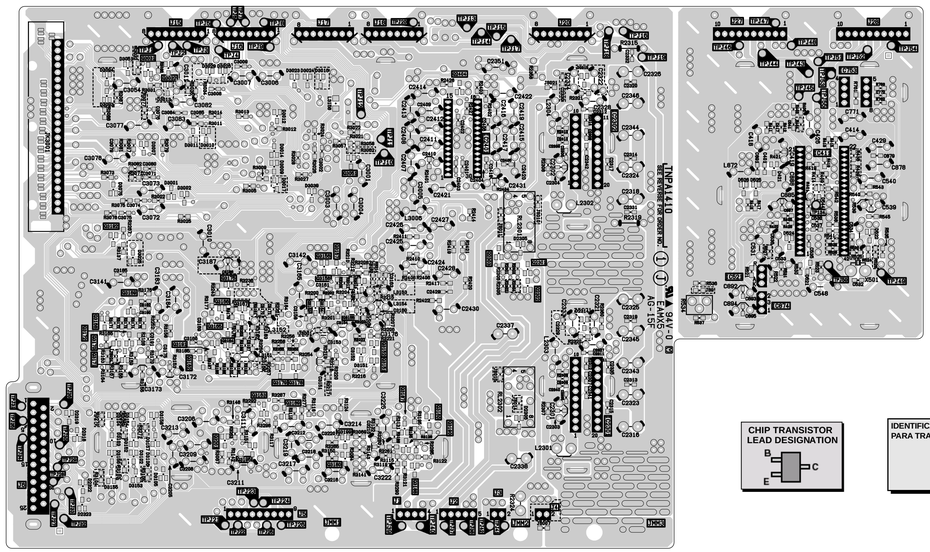


B-Board Layout -TNPH0276
Diagrama del Circuito Impreso (B) -TNPH0276



J-Board Layout (Top-Left, Bottom-Right) - TNPA1410
Diagrama del Circuito Impreso (J), (Izq. Vista Superior; Der. Vista Posterior) - TNPA1410





CHIP TRANSISTOR LEAD DESIGNATION

IDENTIFICACIÓN DE TERMINALES PARA TRANSISTORES EN *CHIP*

Notes:

The schematic for the A-Board is on Sheet 1 Side A

The schematic for the B-Board is on Sheet 6 Side B

The schematic for the J-Board is on Sheet 1 Side B

Notas:

El Diagrama Eléctrico de la tarjeta A esta en la Pag. 1-A

El Diagrama Eléctrico de la tarjeta B esta en la Pag. 6-B

El Diagrama Eléctrico de la tarjeta J esta en la Pag. 1-B

Notes:

The board layouts were modified to enhance and display traces otherwise hidden by a mask.

Notas:

Los diagramas de circuito impreso fueron modificados para mayor claridad.

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NOTA DE SEGURIDAD

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DP-Board Schematic, Left Portion
Diagrama Eléctrico (DP), Sección Izquierda

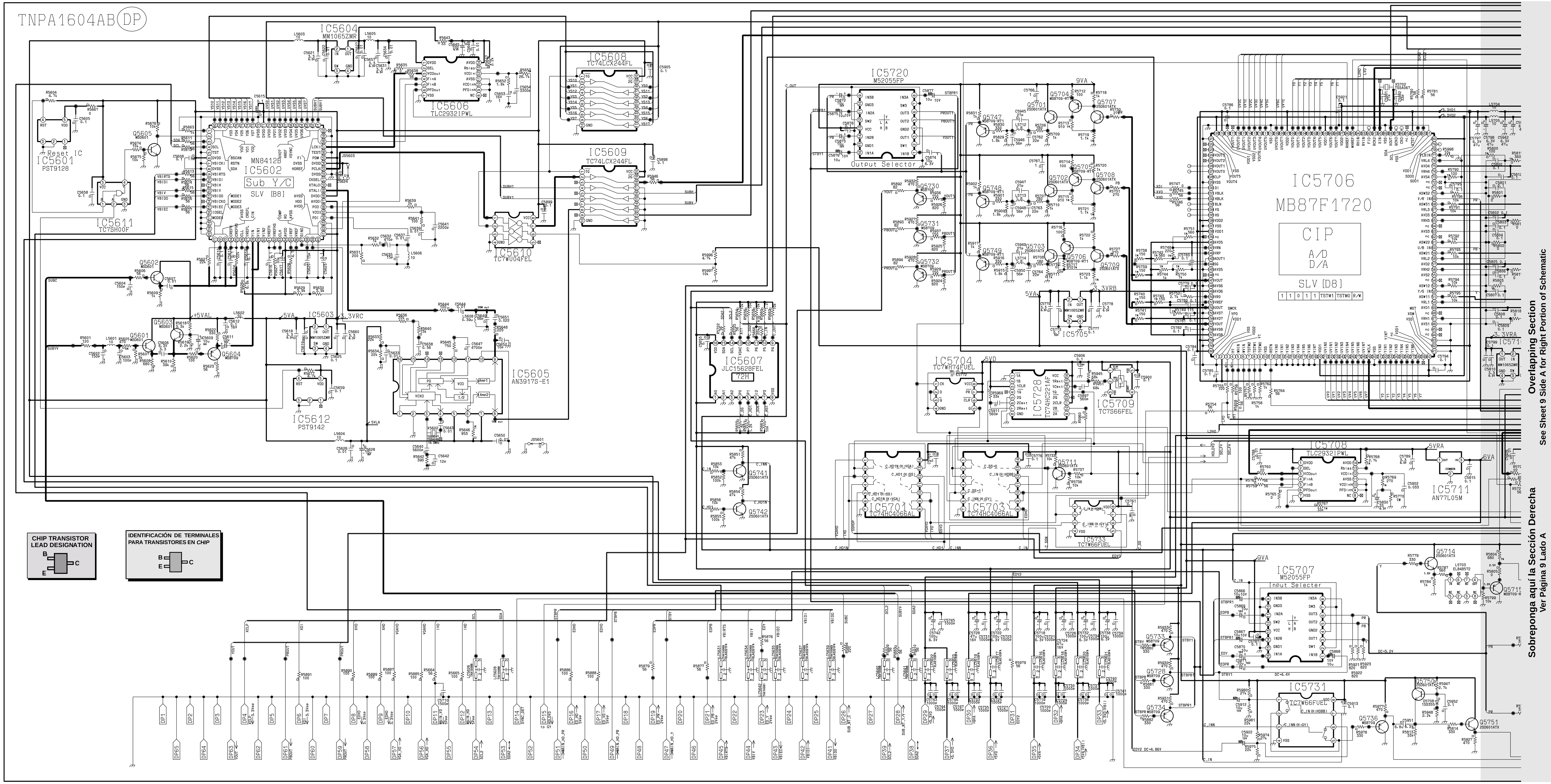

Diagrama Eléctrico Tarjeta DP (Sección Izquierda) MTC9908031C1 & MTC9908032C1

Sheet 8 of 10 Side A

Página 8 de 10 Lado A

DP - Board Schematic (Left Portion) PT-51DX80A/CA & PT-61DX80A/CA/VA

Schematic Notes

1. Resistors are carbon 1/4W unless noted otherwise.
2. Capacitors are ceramic 50V unless noted otherwise.
3. Coil value notes is inductance in µH.
4. Test point indicated by ; Test point but no pin .
5. Components indicated with ⚠ are critical parts and replacement should be made with manufacture specified replacement parts only.
6. ▬ (**BOLD LINE**) indicates the route of B+ supply.
7. The schematic diagrams are current at the time of printing and are subject to change without notice.
8. Ground symbol ⏚ indicates **HOT GROUND CONNECTION**; ⏚ indicates COLD GROUND.

NOTE: All other component symbols are used for engineering design purposes.

Waveform Measurements

1. ③ indicates waveform measurement. (Measurement can be taken at the best accessible location in common to the indicated point.)
2. Taken with an NTSC signal generator connected to the antenna terminal. (NTSC color bar pattern of 8 bars of EIA colors, 100 IRE white and 7.5 IRE black.)
3. Customer Controls (Picture/Audio Menu) are set to Normalize. Volume is set to "MIN".
4. All video and color waveforms are taken with a wideband scope and a probe with low capacitance (10 to 1). Shape and peak altitudes may vary depending on the type of Oscilloscope used and its settings.
5. Ground symbol ⏚ shown on waveform number indicates (Hot) ground lead connection of the Oscilloscope.

CAUTION: Incorrect ground connection of the test equipment will result in erroneous readings.

The waveforms are taken in the order of circuit flow through the various sections.

Voltage Measurements

1. Voltage measurement:
   - AC input to the PTV is 120V. NTSC or HD (1125i & 525P) signal generator is connected to the antenna of the PTV. (Color bar pattern of 100 IRE white and 7.5 IRE black.)
   - All Picture and Audio adjustments are set to Normalize. TV ANT/CABLE - (Set-Up Menu) in TV/ANT Mode Volume - Min TV/Video SW - TV position Audio Mode - Stereo
   - Voltage readings are nominal and may vary ±10% on active devices. Some voltage reading will vary with signal strength and picture content.
   - Supply voltages are nominal.
2. Ground symbol ⏚ indicates ground lead connection of meter. Incorrect ground connection will result in erroneous readings.

CAUTION: Incorrect ground connection of the test equipment will result in erroneous readings.

Note:

The board on this sheet is non serviceable. When a non-serviceable board is defective, please replace the board and return it to the factory.

Nota:

La tarjeta en esta página no es reparable. Si alguna tiene mal funcionamiento, reemplaze la tarjeta por una nueva y envie la defectuosa a su centro de servicio.

IMPORTANT SAFETY NOTICE

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NOTA DE SEGURIDAD

LOS DIAGRAMAS ELÉCTRICOS INCLUYEN CARACTERÍSTICAS ESPECIALES MUY IMPORTANTES PARA LA PROTECCIÓN CONTRA RAYOS-X, QUEMADURAS Y DESCARGAS ELÉCTRICAS. CUANDO SE DE SERVICIO ES IMPORTANTE USAR PARA REEMPLAZO DE COMPONENTES CRITICOS, SOLO PARTES ESPECIFICADAS POR EL FABRICANTES. LOS COMPONENTES CRITICOS ESTAN SEÑALADOS EN LOS DIAGRAMAS POR EL SIMBOLO ⚠.

Overlap schematic sections on the gray area.

Sobreponga las secciones de los diagramas eléctricos en el área gris.

Note:

Voltages and waveforms are on Sheet 3 Side A and Sheet 5 Side B, respectively.

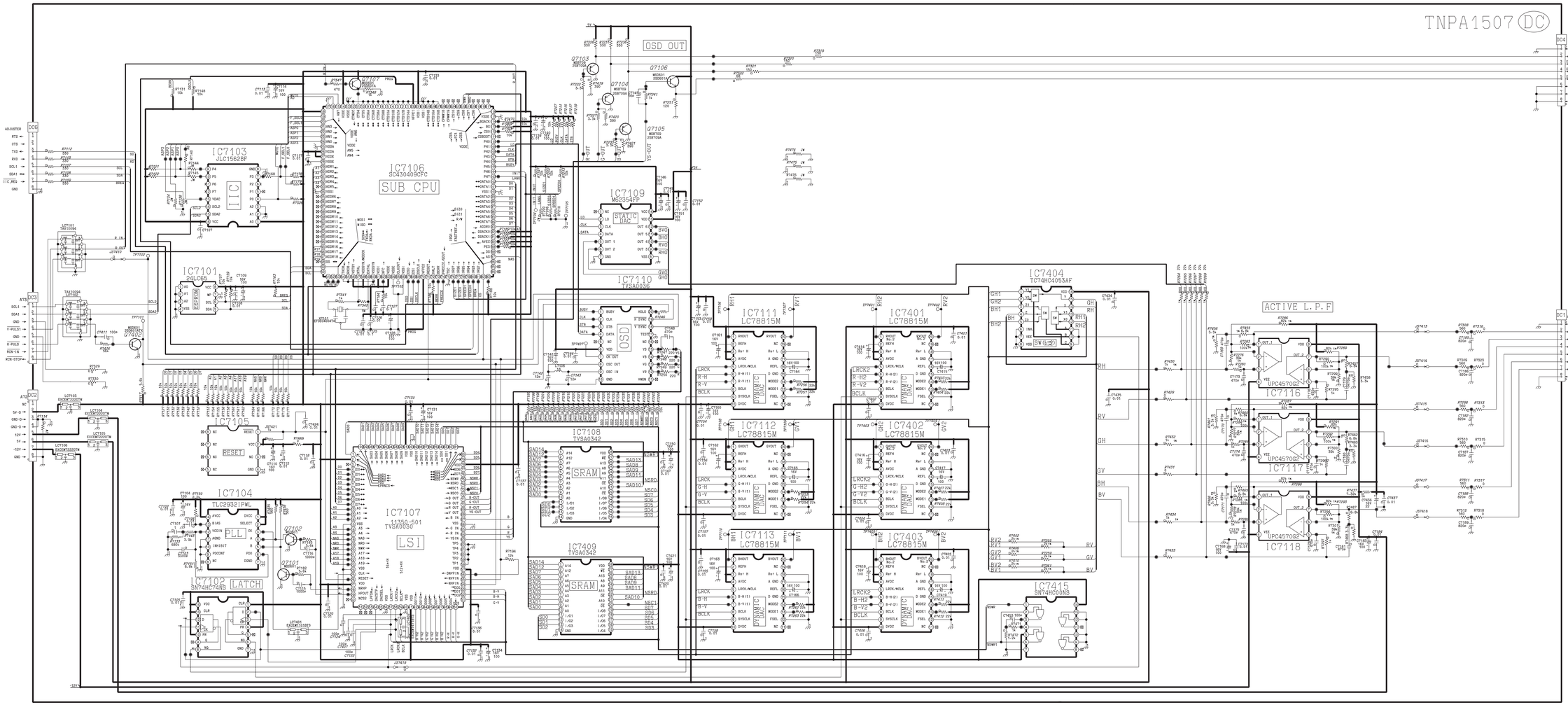
Nota:

Los voltajes y formas de onda se localizan en el lado A de la página 3 y en el lado B de la página 5 respectivamente.

A | B | C | D | E | F | G | H

1 | 2 | 3 | 4 | 5

DC-Board Schematic
Diagrama Eléctrico (DC)



Schematic Notes

1. Resistors are carbon 1/4W unless noted otherwise.
2. Capacitors are ceramic 50V unless noted otherwise.
3. Coil value notes is inductance in µH.
4. Test point indicated by ▼, Test point but no pin ∫.
5. Components indicated with ⚠ are critical parts and replacement should be made with manufacture specified replacement parts only.
6. ▬▬ (**BOLD LINE**) indicates the route of B+ suppply.
7. The schematic diagrams are current at the time of printing and are subject to change without notice.
8. Ground symbol ⏚ indicates **HOT GROUND CONNECTION**; ⏚ indicates COLD GROUND.

NOTE: All other component symbols are used for engineering design purposes.

Notas de los Diagramas

1. Las Resistencias son de Carbón de 1/4W, a menos que se indique otra característica.
2. Los Capacitores son de Cerámica para 50V, a menos que se indique otra característica.
3. El valor indicado de las Bobinas es la inductancia expresada en µH.
4. Los puntos de prueba en la terminal de algún componente son indicados por ▼ Los puntos de prueba fuera de los componentes se indican con ∫.
5. Los componentes señalados con el símbolo ⚠ son considerados componentes críticos y deben ser reemplazados sólo con las partes especificadas por el fabricante.
6. ▬▬ (**LINEA GRUESA**) indica las líneas de alimentación de los Voltajes B+.
7. Los diagramas eléctricos están sujetos a cambio sin previo aviso.
8. El símbolo ⏚ indica que es una conexión a **Tierra Caliente** y el símbolo ⏚ indica conexión a **Tierra Fria**.

NOTA: Los demas símbolos de componentes incluidos son usados con fines de diseño.

Waveform Measurements

1. ① indicates waveform measurement. (Measurement can be taken at the best accessible location in common to the indicated point.)
2. Taken with an NTSC signal generator connected to the antenna terminal. (NTSC color bar pattern of 8 bars of EIA colors, 100 IRE white and 7.5 IRE black.)
3. Customer Controls (Picture/Audio Menu) are set to Normalize. Volume is set to "MIN".
4. All video and color waveforms are taken with a wideband scope and a probe with low capacitance (10 to 1). Shape and peak altitudes may vary depending on the type of Oscilloscope used and its settings.
5. Ground symbol ⏚ shown on waveform number indicates (Hot) ground lead connection of the Oscilloscope.

CAUTION: Incorrect ground connection of the test equipment will result in erroneous readings.

The waveforms are taken in the order of circuit flow through the various sections.

Medición de Formas de Onda

1. Un símbolo como ① indica el punto para medir una señal. (La medición puede hacerse en el punto con mayor accesibilidad, siempre que sea común al indicado.)
2. Se midieron utilizando un generador con formato NTSC conectado a la terminal de la antena. (Patrón de 8 Barras de Colores EAI, formato NTSC de 100 IREs para el Blanco y 7.5 IREs para el Negro.)
3. Los ajustes de usuario de los Menus PICTURE y AUDIO se normalizaron. Posteriormente el nivel de volumen se ajusta al mínimo.
4. Las formas de onda de Video y Color fueron tomadas con un osciloscopio de banda alta y con un punta de prueba de baja capacitancia (10 a 1). La forma y amplitud de las ondas puede variar según el tipo de osciloscopio que se utilice y sus características.
5. El símbolo de tierra ⏚ que aparece junto al número de la forma de onda, indica que se utiliza conexión a **Tierra Caliente** en el extremo negativo de la punta de prueba.

PRECAUCION: Si no se utiliza la conexión a la tierra adecuada, se obtendrán mediciones equivocadas y podría dañar el equipo de medición.

Voltage Measurements

1. Voltage measurement.
   - AC input to the PTV is 120V. NTSC or HD (1125i & 525P) signal generator is connected to the antenna of the PTV. (Color bar pattern of 100 IRE white and 7.5 IRE black.)
   - All Picture and Audio adjustments are set to Normalize. TV ANT/CABLE - (Set-Up Menu) in TV/ANT Mode
     Volume - Min
     TV/Video SW - TV position
     Audio Mode - Stereo
   - Voltage readings are nominal and may vary ±10% on active devices. Some voltage reading will vary with signal strength and picture content.
   - Supply voltages are nominal.
2. Ground symbol ⏚ indicates ground lead connection of meter. Incorrect ground connection will result in erroneous readings.

*CAUTION: **Incorrect ground connection of the test equipment will result in erroneous readings.***

Medición de Voltajes

1. Medición de voltaje:
   - El voltaje de entrada al Receptor es de 120V de Corriente Alterna. Un generador de patrones con formato NTSC se conecta a la entrada de la antena. (Patrón de Barras de Colores con 100 IREs para el Blanco y 7.5 IREs para el Negro.)
   - Los ajustes de los Menus Picture y Audio se normalizan.
     En el Menú Set-Up, en la opción ANTENA, se selecciona el modo de CABLE.
     El nivel de Volumen se minimiza.
     De los modos TV y Video, seleccionar el modo TV.
     Seleccionar modo Estereo del Audio.
   - Las mediciones de los voltajes son nominales y pueden variar hasta 10% en componentes en funcionamiento. Las lecturas de los voltajes pueden variar por la potencia de la señal y el contenido de la imagen.
   - Las fuentes de voltajes son nominales.
2. El símbolo ⏚ indica el tipo de tierra que se utiliza en la conexión del medidor.

PRECAUCION: Si no se utiliza la conexión a la tierra adecuada, se obtendrán mediciones equivocadas y podría dañar el equipo de medición.

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NOTA DE SEGURIDAD

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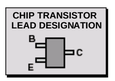
CHIP TRANSISTOR LEAD DESIGNATION



IDENTIFICACIÓN DE TERMINALES PARA TRANSISTORES EN *CHIP*

Note:

The board on this sheet is non serviceable. When a non-serviceable board is defective, please replace the board and return it to the factory.

Nota:

La tarjeta en esta página no es reparable. Si alguna tiene mal funcionamiento, reemplaze la tarjeta por una nueva y envie la defectuosa a su centro de servicio.

MTC990803C1 & MTC990803ZC1
Diagrama Eléctrico
Tarjeta DC
Sheet 8 of 10
Side B
Página 8 de 10
Lado B
DC-Board Schematic
PT-51DX80A/CA & PT-61DX80A/CA/VA

DP-Board Schematic, Right Portion
Diagrama Eléctrico (DP), Sección Derecha

TNPA1604AB DP

Overlapping Section
See Sheet 8 Side A for Left Portion of Schematic

Sobreponga aquí la Sección Izquierda
Ver Página 8 Lado A

Diagrama Eléctrico
Tarjeta DP
(Sección Derecha)
MTC990803C1 & MTC990832C1

Sheet 9 of 10
Side A

Página 9 de 10
Lado A

DP-Board Schematic
(Right Portion)
PT-51DX80A/CA & PT-61DX80A/CA/VA

Overlap schematic sections on the gray area.

Sobreponga las secciones de los diagramas eléctricos en el área gris.

Schematic Notes

1. Resistors are carbon 1/4W unless noted otherwise.
2. Capacitors are ceramic 50V unless noted otherwise.
3. Coil value notes is inductance in μH.
4. Test point indicated by ; Test point but no pin .
5. Components indicated with ⚠ are critical parts and replacement should be made with manufacture specified replacement parts only.
6. ▬ (**BOLD LINE**) indicates the route of B+ supply.
7. The schematic diagrams are current at the time of printing and are subject to change without notice.
8. Ground symbol ⏚ indicates **HOT GROUND CONNECTION**; indicates COLD GROUND.

NOTE: All other component symbols are used for engineering design purposes.

Waveform Measurements

1. ③ indicates waveform measurement. (Measurement can be taken at the best accessible location in common to the indicated point.)
2. Taken with an NTSC signal generator connected to the antenna terminal. (NTSC color bar pattern of 8 bars of EIA colors, 100 IRE white and 7.5 IRE black.)
3. Customer Controls (Picture/Audio Menu) are set to Normalize. Volume is set to "MIN".
4. All video and color waveforms are taken with a wideband scope and a probe with low capacitance (10 to 1). Shape and peak altitudes may vary depending on the type of Oscilloscope used and its settings.
5. Ground symbol ⏚ shown on waveform number indicates (Hot) ground lead connection of the Oscilloscope.

CAUTION: Incorrect ground connection of the test equipment will result in erroneous readings.

The waveforms are taken in the order of circuit flow through the various sections.

Voltage Measurements

1. Voltage measurement:
   - AC input to the PTV is 120V. NTSC or HD (1125i & 525P) signal generator is connected to the antenna of the PTV. (Color bar pattern of 100 IRE white and 7.5 IRE black.)
   - All Picture and Audio adjustments are set to Normalize.
     TV ANT/CABLE - (Set-Up Menu) in TV/ANT Mode
     Volume - Min
     TV/Video SW - TV position
     Audio Mode - Stereo
   - Voltage readings are nominal and may vary ±10% on active devices. Some voltage reading will vary with signal strength and picture content.
   - Supply voltages are nominal.
2. Ground symbol ⏚ indicates ground lead connection of meter. Incorrect ground connection will result in erroneous readings.

*CAUTION: **Incorrect ground connection of the test equipment will result in erroneous readings.***

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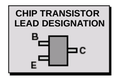
Note:

Voltages and waveforms are on Sheet 3 Side A and Sheet 5 Side B, respectively.

Nota:

Los voltajes y formas de onda se localizan en el lado A de la página 3 y en el lado B de la página 5 respectivamente.

CHIP TRANSISTOR LEAD DESIGNATION



IDENTIFICACIÓN DE TERMINALES PARA TRANSISTORES EN *CHIP*

Notas de los Diagramas

1. Las Resistencias son de Carbón de 1/4W, a menos que se indique otra característica.
2. Los Capacitores son de Cerámica para 50V, a menos que se indique otra característica.
3. El valor indicado de las Bobinas es la inductancia expresada en μH.
4. Los puntos de prueba en la terminal de algún componente son indicados por ; Los puntos de prueba fuera de los componentes se indican con .
5. Los componentes señalados con el símbolo ⚠ son considerados componentes críticos y deben ser reemplazados sólo con las partes especificadas por el fabricante.
6. ▬ (**LINEA GRUESA**) indica las líneas de alimentación de los Voltajes B+.
7. Los diagramas eléctricos están sujetos a cambio sin previo aviso.
8. El símbolo ⏚ indica que es una conexión a **Tierra Caliente** y el símbolo ⏚ indica conexión a **Tierra Fría**.

NOTA: Los demas símbolos de componentes incluidos son usados con fines de diseño.

Medición de Voltajes

1. Medición de voltaje:
   - El voltaje de entrada al Receptor es de 120V de Corriente Alterna. Un generador de patrones con formato NTSC se conecta a la entrada de la antena. (Patrón de Barras de Colores con 100 IREs para el Blanco y 7.5 IREs para el Negro.)
   - Los ajustes de los Menus Picture y Audio se normalizan.
     En el Menú Set-Up, en la opción ANTENA, se selecciona el modo de CABLE.
     El nivel de Volumen se minimiza.
     De los modos TV y Video, seleccionar el modo TV.
     Seleccionar modo Estereo del Audio.
   - Las mediciones de los voltajes son nominales y pueden variar hasta 10% en componentes en funcionamiento. Las lecturas de los voltajes pueden variar por la potencia de la señal y el contenido de la imagen.
   - Las fuentes de voltajes son nominales.
2. El símbolo ⏚ indica el tipo de tierra que se utiliza en la conexión del medidor.

PRECAUCION: Si no se utiliza la conexión a la tierra adecuada, se obtendrán mediciones equivocadas y podría dañar el equipo de medición.

Medición de Formas de Onda

1. Un símbolo como ③ indica el punto para medir una señal. (La medición puede hacerse en el punto con mayor accesibilidad, siempre que sea común al indicado.)
2. Se midieron utilizando un generador con formato NTSC conectado a la terminal de la antena. (Patrón de 8 Barras de Colores EAI, formato NTSC de 100 IREs para el Blanco y 7.5 IREs para el Negro.)
3. Los ajustes de usuario de los Menus PICTURE y AUDIO se normalizaron. Posteriormente el nivel de volumen se ajusta al mínimo.
4. Las formas de onda de Video y Color fueron tomadas con un osciloscopio de banda alta y con un punta de prueba de baja capacitancia (10 a 1). La forma y amplitud de las ondas puede variar según el tipo de osciloscopio que se utilice y sus características.
5. El símbolo de tierra ⏚ que aparece junto al número de la forma de onda, indica que se utiliza conexión a **Tierra Caliente** en el extremo negativo de la punta de prueba.

PRECAUCION: Si no se utiliza la conexión a la tierra adecuada, se obtendrán mediciones equivocadas y podría dañar el equipo de medición.

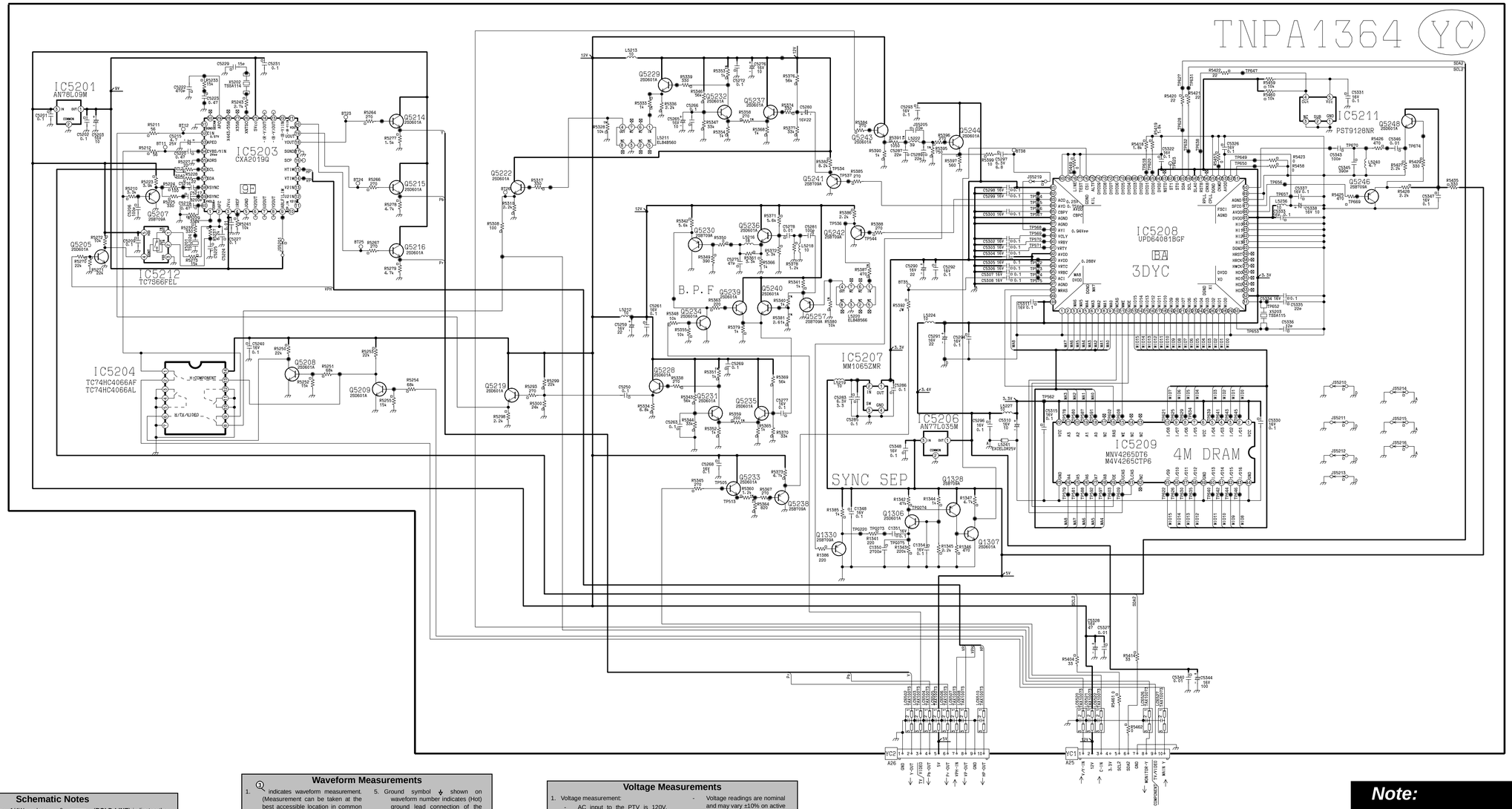
NOTA DE SEGURIDAD

LOS DIAGRAMAS ELÉCTRICOS INCLUYEN CARACTERÍSTICAS ESPECIALES MUY IMPORTANTES PARA LA PROTECCIÓN CONTRA RAYOS-X, QUEMADURAS Y DESCARGAS ELÉCTRICAS. CUANDO SE DE SERVICIO ES IMPORTANTE USAR PARA REEMPLAZO DE COMPONENTES CRITICOS, SOLO PARTES ESPECIFICADAS POR EL FABRICANTES. LOS COMPONENTES CRITICOS ESTAN SEÑALADOS EN LOS DIAGRAMAS POR EL SIMBOLO ⚠.

A | B | C | D | E | F | G | H

1 | 2 | 3 | 4 | 5

YC-Board Schematic
Diagrama Eléctrico (YC)



Schematic Notes

1. Resistors are carbon 1/4W unless noted otherwise.
2. Capacitors are ceramic 50V unless noted otherwise.
3. Coil value notes is inductance in µH.
4. Test point indicated by ▼ : Test point but no pin ⌇.
5. Components indicated with ⚠ are critical parts and replacement should be made with manufacture specified replacement parts only.
6. ▬▬ (**BOLD LINE**) indicates the route of B+ supply.
7. The schematic diagrams are current at the time of printing and are subject to change without notice.
8. Ground symbol ⏚ indicates **HOT GROUND CONNECTION**; ⏦ indicates COLD GROUND.

NOTE: All other component symbols are used for engineering design purposes.

Notas de los Diagramas

1. Las Resistencias son de Carbón de 1/ 4W, a menos que se indique otra característica.
2. Los Capacitores son de Cerámica para 50V, a menos que se indique otra característica.
3. El valor indicado de las Bobinas es la inductancia expresada en µH.
4. Los puntos de prueba en la terminal de algún componente son indicados por ▼ Los puntos de prueba fuera de los componentes se indican con ⌇.
5. Los componentes señalados con el símbolo ⚠ son considerados componentes críticos y deben ser reemplazados sólo con las partes especificadas por el fabricante.
6. ▬▬ (**LINEA GRUESA**) indica las líneas de alimentación de los Voltajes B+.
7. Los diagramas eléctricos están sujetos a cambio sin previo aviso.
8. El símbolo ⏚ indica que es una conexión a **Tierra Caliente** y el símbolo ⏦ indica conexión a **Tierra Fría**.

NOTA: Los demas símbolos de componentes incluidos son usados con fines de diseño.

Waveform Measurements

1. ③ indicates waveform measurement. (Measurement can be taken at the best accessible location in common to the indicated point.)
2. Taken with an NTSC signal generator connected to the antenna terminal. (NTSC color bar pattern of 8 bars of EIA colors, 100 IRE white and 7.5 IRE black.)
3. Customer Controls (Picture/Audio Menu) are set to Normalize. Volume is set to "MIN".
4. All video and color waveforms are taken with a wideband scope and a probe with low capacitance (10 to 1). Shape and peak altitudes may vary depending on the type of Oscilloscope used and its settings.
5. Ground symbol ⏚ shown on waveform number indicates (Hot) ground lead connection of the Oscilloscope.

CAUTION: Incorrect ground connection of the test equipment will result in erroneous readings.

The waveforms are taken in the order of circuit flow through the various sections.

Medición de Formas de Onda

1. Un símbolo como ③ indica el punto para medir una señal. (La medición puede hacerse en el punto con mayor accesibilidad, siempre que sea común al indicado.)
2. Se midieron utilizando un generador con formato NTSC conectado a la terminal de la antena. (Patrón de 8 Barras de Colores EAI, formato NTSC de 100 IREs para el Blanco y 7.5 IREs para el Negro.)
3. Los ajustes de usuario de los Menus PICTURE y AUDIO se normalizaron. Posteriormente el nivel de volumen se ajusta al mínimo.
4. Las formas de onda de Video y Color fueron tomadas con un osciloscopio de banda alta y con un punta de prueba de baja capacitancia (10 a 1). La forma y amplitud de las ondas puede variar según el tipo de osciloscopio que se utilice y sus características.
5. El símbolo de tierra ⏚ que aparece junto al número de la forma de onda, indica que se utiliza conexión a **Tierra Caliente** en el extremo negativo de la punta de prueba.

PRECAUCION: Si no se utiliza la conexión a la tierra adecuada, se obtendrán mediciones equivocadas y podría dañar el equipo de medición.

Voltage Measurements

1. Voltage measurement:
   - AC input to the PTV is 120V. NTSC or HD (1125i & 525P) signal generator is connected to the antenna of the PTV. (Color bar pattern of 100 IRE white and 7.5 IRE black.)
   - All Picture and Audio adjustments are set to Normalize. TV ANT/CABLE - (Set-Up Menu) in TV/ANT Mode Volume - Min TV/Video SW - TV position Audio Mode - Stereo
   - Voltage readings are nominal and may vary ±10% on active devices. Some voltage reading will vary with signal strength and picture content.
   - Supply voltages are nominal.
2. Ground symbol ⏚ indicates ground lead connection of meter. Incorrect ground connection will result in erroneous readings.

*CAUTION: **Incorrect ground connection of the test equipment will result in erroneous readings.***

Medición de Voltajes

1. Medición de voltaje:
   - El voltaje de entrada al Receptor es de 120V de Corriente Alterna. Un generador de patrones con formato NTSC se conecta a la entrada de la antena. (Patrón de Barras de Colores con 100 IREs para el Blanco y 7.5 IREs para el Negro.)
   - Los ajustes de los Menus Picture y Audio se normalizan. En el Menú Set-Up, en la opción ANTENA, se selecciona el modo de CABLE. El nivel de Volumen se minimiza. De los modos TV y Video, seleccionar el modo TV. Seleccionar modo Estereo del Audio.
   - Las mediciones de los voltajes son nominales y pueden variar hasta 10% en componentes en funcionamiento. Las lecturas de los voltajes pueden variar por la potencia de la señal y el contenido de la imagen.
   - Las fuentes de voltajes son nominales.
2. El símbolo ⏚ indica el tipo de tierra que se utiliza en la conexión del medidor.

PRECAUCION: Si no se utiliza la conexión a la tierra adecuada, se obtendrán mediciones equivocadas y podría dañar el equipo de medición.

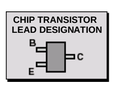
IMPORTANT SAFETY NOTICE

THIS SCHEMATIC DIAGRAM INCORPORATES SPECIAL FEATURES THAT ARE IMPORTANT FOR PROTECTION FROM X-RADIATION, FIRE AND ELECTRICAL SHOCK HAZARDS. WHEN SERVICING IT IS ESSENTIAL THAT ONLY MANUFACTURERS SPECIFIED PARTS BE USED FOR THE CRITICAL COMPONENTS DESIGNATED WITH A ⚠ IN THE SCHEMATIC.

NOTA DE SEGURIDAD

LOS DIAGRAMAS ELÉCTRICOS INCLUYEN CARACTERÍSTICAS ESPECIALES MUY IMPORTANTES PARA LA PROTECCIÓN CONTRA RAYOS-X, QUEMADURAS Y DESCARGAS ELÉCTRICAS. CUANDO SE DE SERVICIO ES IMPORTANTE USAR PARA REEMPLAZO DE COMPONENTES CRITICOS, SOLO PARTES ESPECIFICADAS POR EL FABRICANTES, LOS COMPONENTES CRITICOS ESTAN SEÑALADOS EN LOS DIAGRAMAS POR EL SIMBOLO ⚠.

CHIP TRANSISTOR LEAD DESIGNATION



IDENTIFICACIÓN DE TERMINALES PARA TRANSISTORES EN *CHIP*

Note:

Voltages and waveforms are on Sheet 3 Side A and Sheet 5 Side B, respectively.

Nota:

Los voltajes y formas de onda se localizan en el lado A de la página 3 y en el lado B de la página 5 respectivamente.

Note:

The board on this sheet is non serviceable. When a non-serviceable board is defective, please replace the board and return it to the factory.

Nota:

La tarjeta en esta página no es reparable. Si alguna tiene mal funcionamiento, reemplaze la tarjeta por una nueva y envie la defectuosa a su centro de servicio.

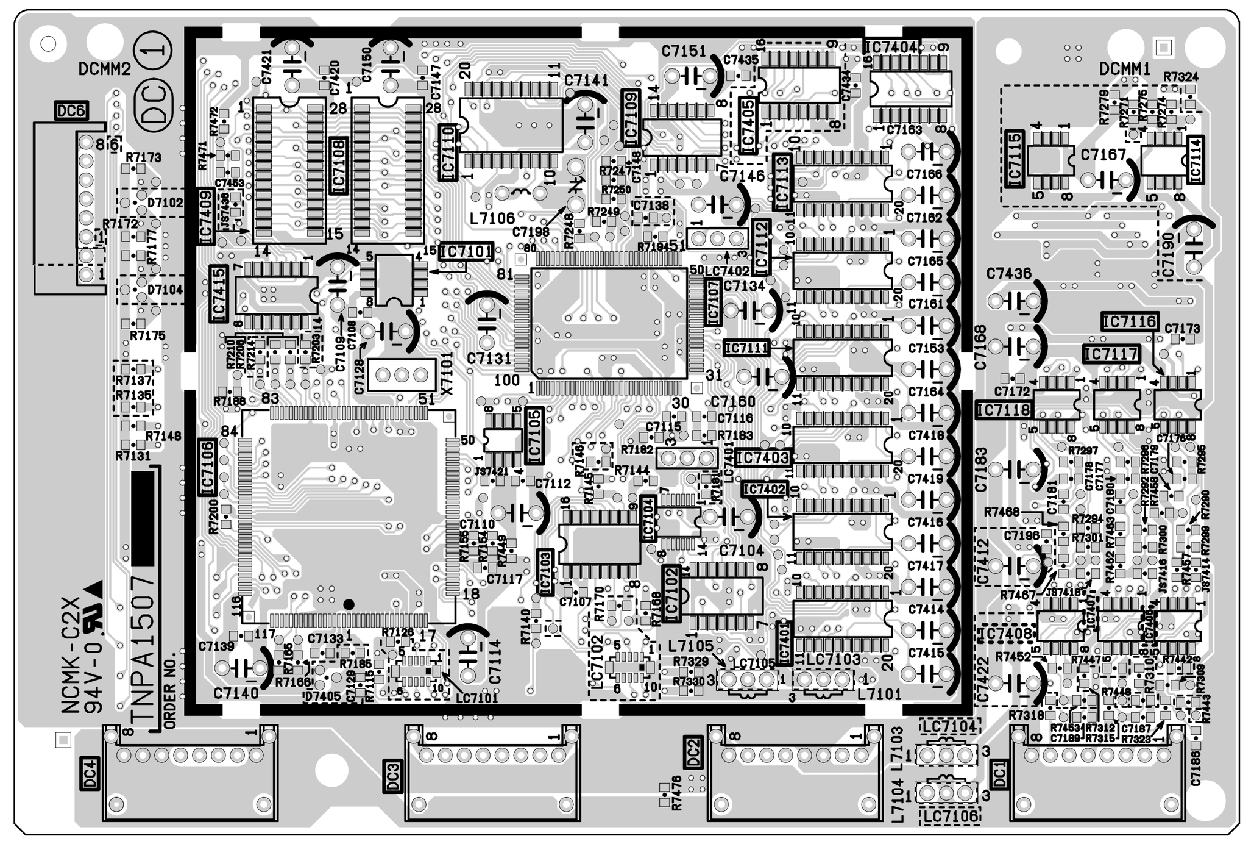
Diagrama Eléctrico YC-Board Schematic
Tarjeta YC
MTC990803031C1 & MTC990803232C1

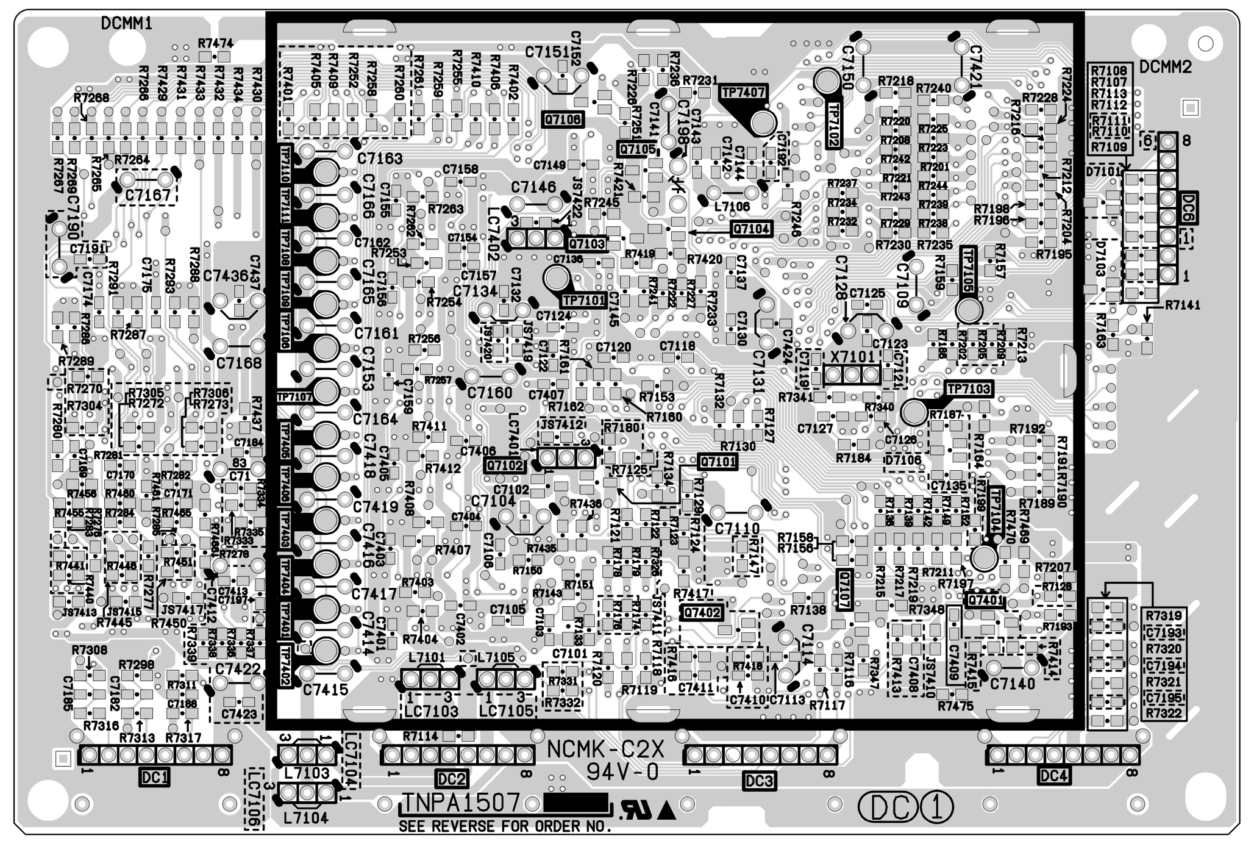
Sheet 9 of 10
Side B

Página 9 de 10
Lado B

PT-51DX80A/CA & PT-61DX80A/CA/VA

DC-Board Layout (Top-Left, Bottom Right) - TNPA1507
Diagrama del Circuito Impreso (DC) (Izq. Vista Superior; Der. Vista Posterior) - TNPA1507





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La tarjeta en esta página no es reparable. Si alguna tiene mal funcionamiento, reemplaze la tarjeta por una nueva y envie la defectuosa a su centro de servicio.

Boards Designation
- A-Board - Main Signal
- B-Board - Power Supply
- D-Board - Diode Mod. H. Drive
- DC-Board - Digital Convergence
- DP-Board - Digital Processing
- G-Board - Front AV Connections
- H-Board - AV Terminal (YUV)
- J-Board - AV Switch, Audio AMP etc.
- K-Board - Customer Controls
- LB/LG/LR-Boards - Blue, Green & Red CRT Boards
- N-Board - VIF, MTS
- R-Board - Remote Control Sensor
- SB/SG/SR-Boards - VM for Blue, Green & Red
- T-Board - Sub Power
- X-Board - RGB Signal Sync Out
- YC-Board - 3D Y/C

Indice de Tarjetas
- Tarjeta A - Chasis Principal
- Tarjeta B - Fuente de Alimentación
- Tarjeta D - Impulsor Horiz. de la Modulación del Diodo
- Tarjeta DC - Convergencia Digital
- Tarjeta DP - Procesamiento Digital
- Tarjeta G - Entradas frontales de AV
- Tarjeta H - Terminales AV (YUV)
- Tarjeta J - Interruptor AV, Audio AMP etc.
- Tarjeta K - Ajustes de Usuario
- Tarjetas LB/LG/LR - Tarjetas Roja, Azul y Verde para los TRC
- Tarjeta N - VIF, MTS
- Tarjeta R - Sensor del Control Remoto
- Tarjetas SB/SG/SR - VM para el Rojo, Azul y Verde
- Tarjeta T - Poder Alterno
- Tarjeta X - Señal de Sync RGB
- Tarjeta YC - 3D Y/C

Schematic Notes
1. Resistors are carbon 1/4W unless noted otherwise.
2. Capacitors are ceramic 50V unless noted otherwise.
3. Coil value notes is inductance in μH.
4. Test point indicated by ; Test point but no pin .
5. Components indicated with ⚠ are critical parts and replacement should be made with manufacture specified replacement parts only.
6. (**BOLD LINE**) indicates the route of B+ supply.
7. The schematic diagrams are current at the time of printing and are subject to change without notice.
8. Ground symbol indicates **HOT GROUND CONNECTION**; indicates COLD GROUND.

NOTE: All other component symbols are used for engineering design purposes.

Notas de los Diagramas
1. Las Resistencias son de Carbón de 1/4W, a menos que se indique otra característica.
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1. (3) indicates waveform measurement. (Measurement can be taken at the best accessible location in common to the indicated point.)
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The waveforms are taken in the order of circuit flow through the various sections.

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1. Un símbolo como (3) indica el punto para medir una señal. (La medición puede hacerse en el punto con mayor accesibilidad, siempre que sea común al indicado.)
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     TV/Video SW - TV position
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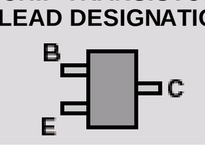

IDENTIFICACIÓN DE TERMINALES PARA TRANSISTORES EN *CHIP*